PB89-117386

Superfund Record of Decision (EPA Region 2)
American Thermostat, New York
January 1988 (First Remedial Action)

(U.S.) Environmental Protection Agency
Washington, DC

7 Jan 88

U.S. Department of Commerce
National Technical Information Service
NTIS

United States
Environmental Protection
Agency

Office of
Emergency and
Remedial Response

EPA/ROD/R02-88/056
January 1988

PB89-117386

EPA

Superfund Record of Decision:

American Thermostat, NY

REPRODUCED BY
U.S. DEPARTMENT OF COMMERCE
NATIONAL TECHNICAL INFORMATION SERVICE
SPRINGFIELD, VA. 22161

50272-101

REPORT DOCUMENTATION PAGE

1. REPORT NO. EPA/ROD/R02-88/056

2.

3. Recipient's Accession No. PB89 117386/AS

4. Title and Subtitle
SUPERFUND RECORD OF DECISION
American Thermostat, NY
First Remedial Action

5. Report Date 01/07/88

6.

7. Author(s)

8. Performing Organization Rept. No.

9. Performing Organization Name and Address

10. Project/Task/Work Unit No.

11. Contract(C) or Grant(G) No.
(C)
(G)

12. Sponsoring Organization Name and Address
U.S. Environmental Protection Agency
401 M Street, S.W.
Washington, D.C. 20460

13. Type of Report & Period Covered 800/000

14.

15. Supplementary Notes

16. Abstract (Limit: 200 words)

The American Thermostat Corporation (ATC) site, occupying approximately eight acres, is located in South Cairo, New York. Private homes are near the site on its eastern and western boundaries. Former plant operations involving the assembly of thermostats for small appliances were carried out in one existing large building. From the mid 1950s through at least 1981, waste containing TCE and PCE sludges were poured down drains which were connected to an abandoned septic system and dumped outside onto plant grounds. The drains were connected to the abandoned septic system. In March 1981, two ATC employees were observed dumping solvents on plant property. This triggered investigations into the company's waste handling practices by the New York State Department of Environmental Conservation (NYSDEC) and the New York State Attorney General's office. Subsequently, water samples collected in five privately-owned wells in the ATC vicinity revealed the presence of high levels of TCE and PCE. As a result, ATC began supplying bottled water to local residents in April 1981. By late 1982, ATC had installed carbon filters on its own well and the affected residential wells. Pursuant to a 1983 Consent Order, ATC and AMRO Realty Coperation (AMRO), the owners of the property, agreed to clean up the site and its surroundings; supply bottled water for cooking and drinking purposes; and install, monitor, and maintain carbon filter systems (See Attached Sheet)

17. Document Analysis a. Descriptors
Record of Decision
American Thermostat, NY
First Remedial Action
Contaminated Media: gw
Key Contaminants: PCE, TCE, VOCs

b. Identifiers/Open-Ended Terms

c. COSATI Field/Group

18. Availability Statement

19. Security Class (This Report) None

20. Security Class (This Page) None

21. No. of Pages 113

22. Price PC$21.95/MF$6.95

(See ANSI-Z39.18)

See Instructions on Reverse

OPTIONAL FORM 272 (4-77)
(Formerly NTIS-35)
Department of Commerce

16. ABSTRACT (continued)

for the five affected homes. ATC and AMRO did not fully comply with the Consent Order and did not remedy the contamination at the site. In June 1983, a new onsite 4,500-gallon septic system was installed and, in September 1983, ATC provided carbon filtration for septic system discharges to lower PCE levels. ATC ceased operations in May 1985 and filed involuntary bankruptcy. EPA has been sampling area wells and maintaining previously installed carbon filtration units. In addition, EPA installed two new carbon filtration units on contaminated private wells; installed an air stripping system on a highly contaminated well; and drilled a new well attempting to locate a clean water supply. The primary contaminates of concern affecting the ground water are VOCs including PCE and TCE.

The selected remedial action for this site includes: extension of the existing Catskill Water District pipeline from Sandy Plains Road or from Rudolph Weir Road to the affected and potentially affected area. The exact route of the pipeline will be determined during design. The estimated capital cost for this remedial action ranges from $2,270,000 to $2,380,000 with annual O&M of $100,000 to $110,000, pending the pipeline route decision.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION II

DATE: DEC 31 1987

SUBJECT: Record of Decision for the American Thermostat Site

FROM: Stephen D. Luftig, Director
Emergency and Remedial Response Division

TO: Christopher J. Daggett
Regional Administrator

Attached, pleased find the American Thermostat site Record of Decision (ROD) prepared by my staff.

The American Thermostat Corporation site is located in the Catskill Creek Valley in South Cairo, Greene County, New York. Water in the area is supplied by private wells; there is no nearby public water supply.

American Thermostat Corporation commenced operations at the Site in 1954. The operations consisted of the manufacturing of thermostats for small appliances. In 1981, the New York State Department of Environmental Conservation (NYSDEC) discovered employees of AT improperly disposing of chemicals at the Site. Preliminary investigations by NYSDEC and the New York State Department of Law in 1981 revealed that for a number of years AT employees had been pouring waste organic solvents down drains connected to the septic system and that waste solvents and sludges were dumped on the parking lot. Sample analysis of the discharge from two facility outfalls by the New York State Department of Health ("NYSDOH"), detected elevated levels of tetrachloroethylene ("PCE") and trichloroethylene ("TCE"). Subsequent potable water sampling of homes within a quarter of a mile from the site, conducted in 1981 by NYSDOH, indicated the presence of PCE and TCE in five residential wells (Rath, Rivenburg, Lais, Nesensohn, and Briggs) and at the AT facility. The concentrations of PCE ranged from 130 ppb to 47,000 ppb; TCE concentrations were much lower. The highest concentration of PCE was detected at the Rath's well, adjacent to the AT facility. The affected residents were advised by NYSDOH not to utilize their well water for drinking or cooking purposes.

On February 17, 1983, AT signed an Interim Consent Order with the State of New York which stated that AT must provide for the installation, monitoring, and maintenance of carbon filtration systems, and must also supply bottled water for cooking and drinking purposes to the five affected homes. Other provisions called for the monitoring of two groups of private wells in order to ensure prompt identification of additional potable water contamination, and for a limited remedial investigation to determine the nature and extent of surface and subsurface contamination.

AT provided bottled drinking water and installed carbon filters at its facility and at three of the affected homes. The Rath's residence was connected to AT's own treated water supply because the high concentration of PCE and TCE in the Rath's well would have required frequent recharge of the carbon filter to prevent breakthrough. One affected resident whose water was contaminated declined a carbon filter.

On May 7, 1985, AT ceased operations, and a bankruptcy petition was subsequently filed against the company. As a result, AT ceased providing maintenance of the carbon filtration systems to ensure that breakthrough did not occur, and stopped supplying bottled water to the five affected homes. In June 1985, EPA sampled the water at homes in the vicinity of the Site to determine potable water quality and to monitor carbon treatment effectiveness for those homes with filters. PCE and TCE were also detected at another residential well (Cornell).

In response to a request from NYSDEC, a removal action to maintain the carbon filters installed by AT, to sample other potable wells near the site and, where necessary, to provide homes with bottled water and carbon filters, was authorized by EPA in August 1985. EPA performed the sampling, recharged the existing carbon filters at three residences, and installed a filter at the Cornell residence.

In April 1986, NYSDEC requested that EPA extend the removal action to provide a reliable source of safe drinking water for the Raths and the Rivenburgs. Both wells had high concentrations of PCE. In September 1986, EPA authorized the drilling of a new well for the Rivenburgs and the installation of an airlift pump, organic adsorption unit, and carbon filters for the Rath's well. The treatment system was installed on the Rath's well; the new well that was drilled for the Rivenburgs, however, was found to be contaminated with PCE and TCE.

In February 1987, an additional contaminated well was discovered. EPA authorized funding for the installation of a carbon filter at the affected residence (Franks) and for continued operation of the Rath's water treatment system.

This ROD reflects the recommendations of the Emergency and Remedial Response Division for an alternate water supply for the residents affected or threatened by PCE- and TCE- contaminated groundwater from the AT site. Upon completion of a source control remedial investigation/feasibility study (RI/FS) to further define the nature and extent of contamination at the site, a separate ROD will be prepared.

Our recommendations were developed based upon the Administrative Record for this site, which includes a focused feasibility study (FFS) prepared by Ebasco Services, Inc.

The recommended remedy to provide an alternate water supply involves the extension of the Catskill water supply pipeline to the affected and potentially affected area. Under this remedy, service connections will be provided to all residents who currently have contaminated wells and those wells that are threatened.

The capital and present worth costs for the recommended remedy range from 2.27-2.38 million and 3.21-3.47 million, respectively.

The State of New York has been consulted, and agrees that the recommended alternative is the most appropriate means of providing an alternate water supply for the residents surrounding the site.

The recommended actions, I believe, are consistent with the goals and objectives of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended by the Superfund Amendments and Reauthorization Act of 1986 (CERCLA), and the National Contingency Plan, to provide adequate protection of human health and the environment. This remedy satisfies all applicable or relevant and appropriate requirements for this operable unit.

Notice to the potentially responsible parties, in accordance with the special notice procedures outlined in §122(e) of CERCLA, was sent on December 4, 1987 with the release of the FFS.

The costs of construction of the recommended remedy will be cost-shared as follows: 90% EPA and 10% NYSDEC.

Should you have any questions concerning the ROD, do not hesitate to contact me.

Attachment

Record of Decision
Remedial Alternative Selection

DECLARATION FOR THE RECORD OF DECISION

SITE NAME AND LOCATION

American Thermostat Corporation, South Cairo, Greene County, New York.

STATEMENT OF PURPOSE AND BASIS

This decision document represents the selected remedial action for providing an alternate water supply for the residents affected or threatened by the tetrachloroethylene and trichloroethylene-contaminated groundwater around the American Thermostat Corporation site. The selected remedial alternative was developed in accordance with the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), 42 USC §9601, et seq., as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), and to the extent practicable, the National Oil and Hazardous Substance Pollution Contingency Plan (NCP), 40 CFR Part 300.

This decision is based on the administrative record for the American Thermostat Corporation site. The attached index identifies the items that comprise the administrative record, upon which the selection of the remedial action is based. Among the documents relied upon are:

- -Focused Feasibility Study, Ebasco Services, Inc, September 1987.
- -Attached Summary of Remedial Alternative Selection for the American Thermostat Site.
- -Attached Responsiveness Summary, December 1987.

A copy of the administrative record is located at the following locations:

Greene County Court House
County Clerk's Office
446 Main Street
Catskill, New York 12414

U.S. Environmental Protection Agency
Emergency and Remedial Response Division
26 Federal Plaza
New York, New York 10278

DESCRIPTION OF SELECTED REMEDY

The remedial alternative presented in this document is the first operable unit of a permanent remedy for the American Thermostat Corporation site. It will provide a permanent and reliable solution for the prevention of health risks to area residents associated with exposure to contaminated groundwater. The alternative selected involves extension of the Catskill water supply pipeline to the affected and potentially affected area. The specific waterline route will be determined during the design phase. Service connections will be provided to all residents currently utilizing contaminated or potentially threatened wells.

The contaminant plume and source or sources of contamination will be addressed in a subsequent remedial investigation/ feasibility study and Record of Decision.

DECLARATIONS

Consistent with CERCLA as amended, and the NCP, I have determined that the selected remedy is protective of human health and the environment, attains federal and state requirements that are applicable or relevant and appropriate, and is cost-effective.

The selected remedy represents a permanent solution for a portion of the problem posed by the site--namely, the threat posed to area residents as a result of exposure to contaminated groundwater. The selected remedy does not satisfy the statutory preference for remedial actions in which treatment which permanently and significantly reduces the volume, toxicity or mobility of the hazardous substances is a principal element. The reason for this is that such treatment options were not found to be practicable or appropriate for this operable unit. Such options, including possible methods of treating the contaminated groundwater, will be considered in the next operable unit.

The State of New York has been consulted and agrees with the selected remedy, as is documented in the attached letter of concurrence.

I have also determined that the selected remedial action for the American Thermostat Corporation site is appropriate when balanced against the availability of Superfund monies for use at other sites.

JANUARY 7, 1988
Date

Christopher J. Daggett
Christopher J. Daggett
Regional Administrator

SUMMARY OF REMEDIAL ALTERNATIVE SELECTION
AMERICAN THERMOSTAT SITE
NEW YORK

United States Environmental Protection Agency
Region 2
New York

TABLE OF CONTENTS

Page

Site Location and Description........................... 1
Site History.. 2
Current Site Status..................................... 3
Enforcement History..................................... 4
Community Relations..................................... 5
Preliminary Public Health Risk Assessment............... 6
Alternatives Evaluation................................. 9
Selected Remedy... 49
Schedule.. 54

ATTACHMENTS

A - Administrative Record Index
B - NYSDEC Letter of Concurrence
C - Responsiveness Summary

American Thermostat Corporation Site
South Cairo, New York

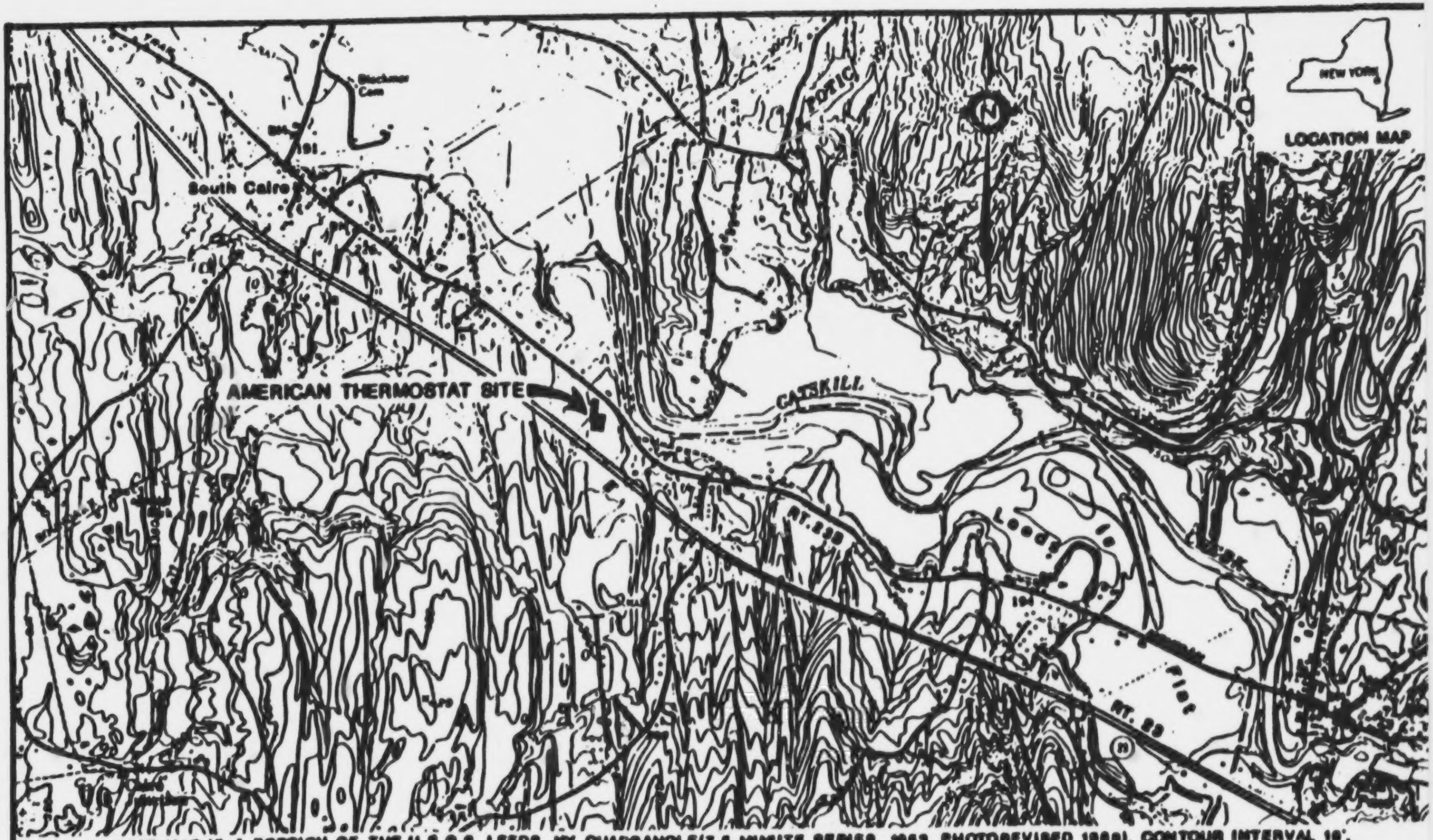
SITE LOCATION AND DESCRIPTION

The American Thermostat Corporation (AT) site is located in South Cairo, Greene County, approximately thirty miles south of Albany, New York. The site location is shown in Figure 1. The property, about eight acres, is bounded on the northeast and southwest by routes 23B and 23, respectively. Private homes are near the site on its eastern and western boundaries. The site is not fenced. The property itself is relatively flat, but the surrounding land drops off steeply to Catskill Creek and two small tributaries east and west of the site.

A site sketch is shown in Figure 2. The plant entrance is located on Route 23B. The former plant operations were carried out in one existing large building which is surrounded by a large parking area, some of which is paved. A small pump house which contains the company well is located at the rear of the property near Route 23. A septic tank drainage field on the western side of the building was disconnected in 1983 and replaced by a 4,500 gallon per day capacity septic tank and drainage field east of the building. State Pollutant Discharge Elimination System (SPDES) permits were issued by the New York State Department of Envirnmental Conservation (NYSDEC) for the sewage discharge (discharge point 003) and two non-contact cooling water discharges (discharge points 001 and 002) as shown in Figure 2.

Regionally, the bedrock within Greene County consists of interbedded shales and sandstones of Devonian age known as the Catskill Formation (Amter, 1981). The Catskill Formation is made up of four distinct bedrock groups. From oldest to youngest, these groups are the Hamilton, Genessee, Sonyea and West Falls. The AT facility lies within the Hamilton Group which is further subdivided into the Plattekill Formation which underlies the site.

The Plattekill Formation consists of sandstones, siltstones and shales. These sediments have been uplifted and folded resulting in a bedding plane dip to the west. This bedrock structure controls the topography of the area which in turn influences the surface and subsurface hydrology (Amter, 1981).


NEW YORK
LOCATION MAP
South Cairo
AMERICAN THERMOSTAT SITE
CATSKILL
Leeds
Flat
RT. 23B
RT. 23
N

BASE MAP IS A PORTION OF THE U.S.G.S. LEEDS, NY QUADRANGLE(7.5 MINUTE SERIES, 1963, PHOTOREVISED 1980). CONTOUR INTERVAL 10'.

SCALE 1" = 2000'

FIGURE 1

LOCATION MAP

AMERICAN THERMOSTAT SITE,

SOUTH CAIRO, NY

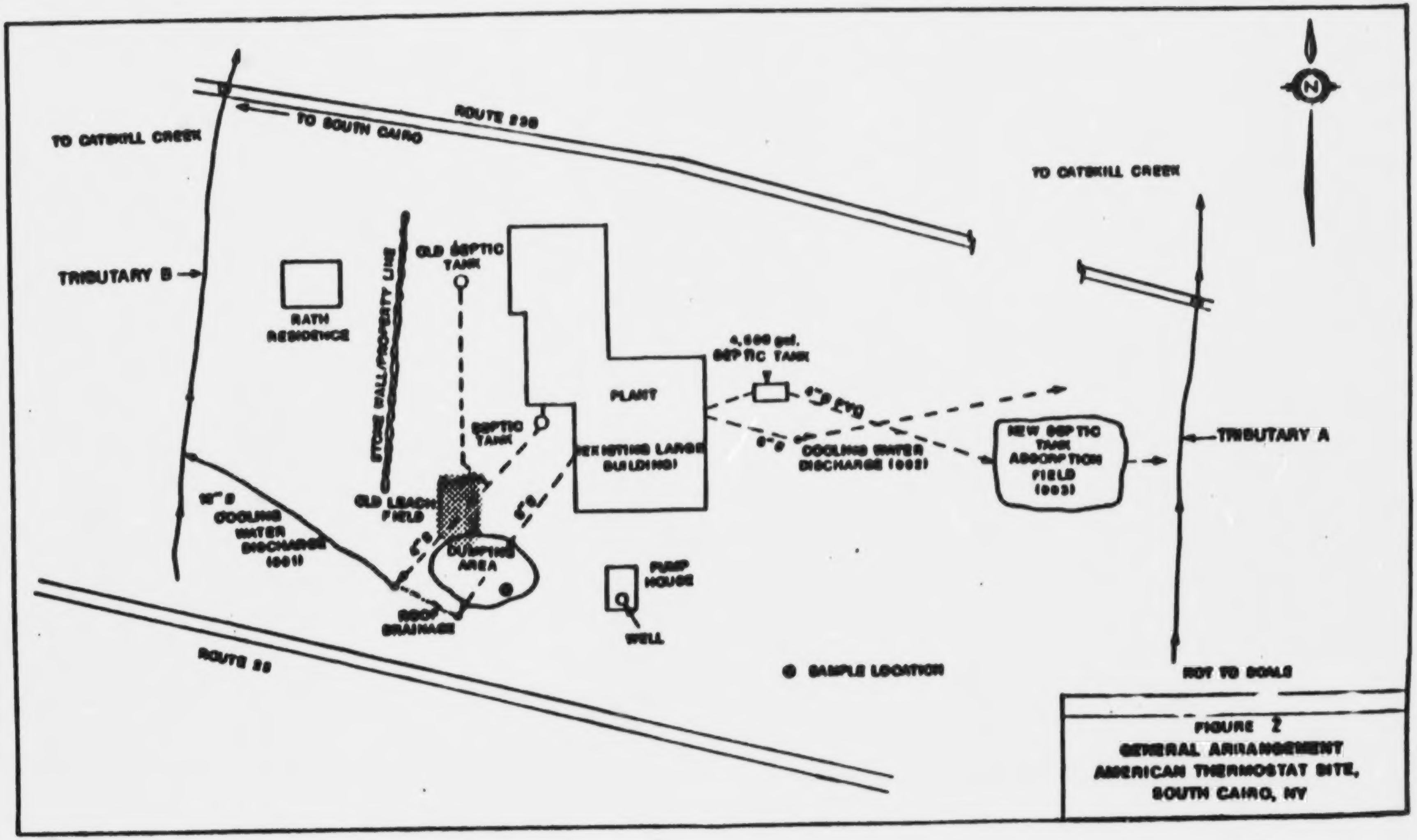

TO CATSKILL CREEK
ROUTE 23B
TO SOUTH CAIRO
TO CATSKILL CREEK
TRIBUTARY B
RATH RESIDENCE
STONE WALL/PROPERTY LINE
OLD SEPTIC TANK
PLANT
4,000 gal. SEPTIC TANK
SEPTIC TANK
EXISTING LARGE BUILDING)
COOLING WATER DISCHARGE (002)
NEW SEPTIC TANK ABSORPTION FIELD (003)
TRIBUTARY A
COOLING WATER DISCHARGE (001)
OLD LEACH FIELD
DUMPING AREA
ROOF DRAINAGE
PUMP HOUSE
WELL
ROUTE 23
● SAMPLE LOCATION
NOT TO SCALE

FIGURE 2
GENERAL ARRANGEMENT
AMERICAN THERMOSTAT SITE,
SOUTH CAIRO, NY

Unconsolidated glacial deposits overlie bedrock throughout most of the region. During the Pleistocene epoch a layer of till was deposited over upland mountainous areas, and thick, well-sorted, and stratified drift consisting of gravel, silt and clay was deposited by meltwater in lower valley areas (Berdan, 1954). The surficial till soils at the site exhibit significant variations in permeability. Reportedly, the soil is only about three feet thick overlying a significantly permeable and fractured upper bedrock surface (Amter, 1981). Alluvium is found in stream bed areas.

Groundwater is found almost exclusively in bedrock fracture zones and joints throughout upland areas where the AT facility is located. The Plattekill Formation is reported to have very low primary permeability, but due to the presence of numerous fractures and joints, its secondary permeability is much higher. Yields of 20 gallons per minute (gpm) are documented for wells completed in sandstone; and well yields of 14-15 gpm are documented for the more tightly cemented siltstones and shales (Berdan, 1954).

Regionally, depth to groundwater ranges from less than one foot in swampy areas to almost 300 feet, with the average depth about 30 to 40 feet (Berdan, 1954). Immediately west of the facility is a small valley which includes Tributary "B", a tributary to Catskill Creek. East of the facility is Tributary "A" which also flows into Catskill Creek. Reportedly, perched groundwater is found in this localized valley area (Amter, 1981). However, as mentioned, bedrock bedding planes dip in a westerly direction. Accordingly, regional groundwater appears to flow at depth towards the west.

SITE HISTORY

The original building was built in 1954 by AT for the assembly of thermostats for small appliances. As operations expanded, additions were made to the original building. From approximately the mid-1950s through at least 1981, waste trichloroethylene (TCE) and tetrachloroethylene (PCE) sludges were poured down drains inside the building and were dumped outside on the plant grounds. The drains were connected to the abandoned septic system.

In March 1981, two AT employees were observed dumping solvents on plant property. This triggered investigations into the company's waste handling practices by NYSDEC and the New York State Attorney General's office.

During April and May 1981, water samples were collected from several privately-owned wells in the vicinity of the AT site by the New York State Department of Health (NYSDOH) and NYSDEC.

Figure 3 shows the locations of residential wells surrounding the AT site. Analysis of water samples taken by NYSDEC and NYSDOH indicated the presence of TCE and PCE. Five of the sampled wells, those belonging to Rath, Lais, Rivenburg, Briggs, and J. Schmidt (formerly Nesensohn), indicated concentration levels of PCE in excess of the guideline of 0.05 ppm (mg/l) for volatile organic chemicals established by the Commissioner of NYSDOH. TCE was detected in four of the five wells, with two samples indicating a concentration in excess of the State guideline. The affected residents were advised by NYSDOH not to utilize their well water for cooking or drinking purposes. In November 1981, the State of New York filed suit against AT and Amro Realty Corporation (Amro), the owner of the property. Suits were also filed by several of the plant's neighbors in late 1981.

As a result of the high level of PCE in several nearby wells, AT began supplying bottled water to local residents in April 1982. By November 1982, AT had installed carbon filters on its own well and the affected residential wells. The nearest neighbor, the Raths, were connected to AT's well water supply system. In December 1982, the site was added to the National Priorities List, established pursuant to Section 105 of CERCLA 42 U.S.C. §9605.

In February 1983, New York State entered into an interim Consent Order with AT and Amro in which the companies agreed to investigate and clean up the site and its surroundings, supply bottled water for cooking and drinking purposes, and install, monitor, and maintain carbon filter systems for the five affected homes listed above. The Order also stipulated that two groups of bordering private wells had to be monitored to determine whether any contamination had spread beyond the originally affected area. AT and Amro did not fully comply with the Consent Order and did not remedy the contamination at the site, but only temporarily provided the affected residences with safe drinking water.

In June 1983, a new 4,500-gallon septic system was installed at the AT site, and the cooling water discharges were separated. New SPDES permits were issued for three separate discharges, the sewage system effluent and two non-contact cooling water discharges. In September 1983, AT provided carbon filtration for these discharges to lower the levels of PCE.

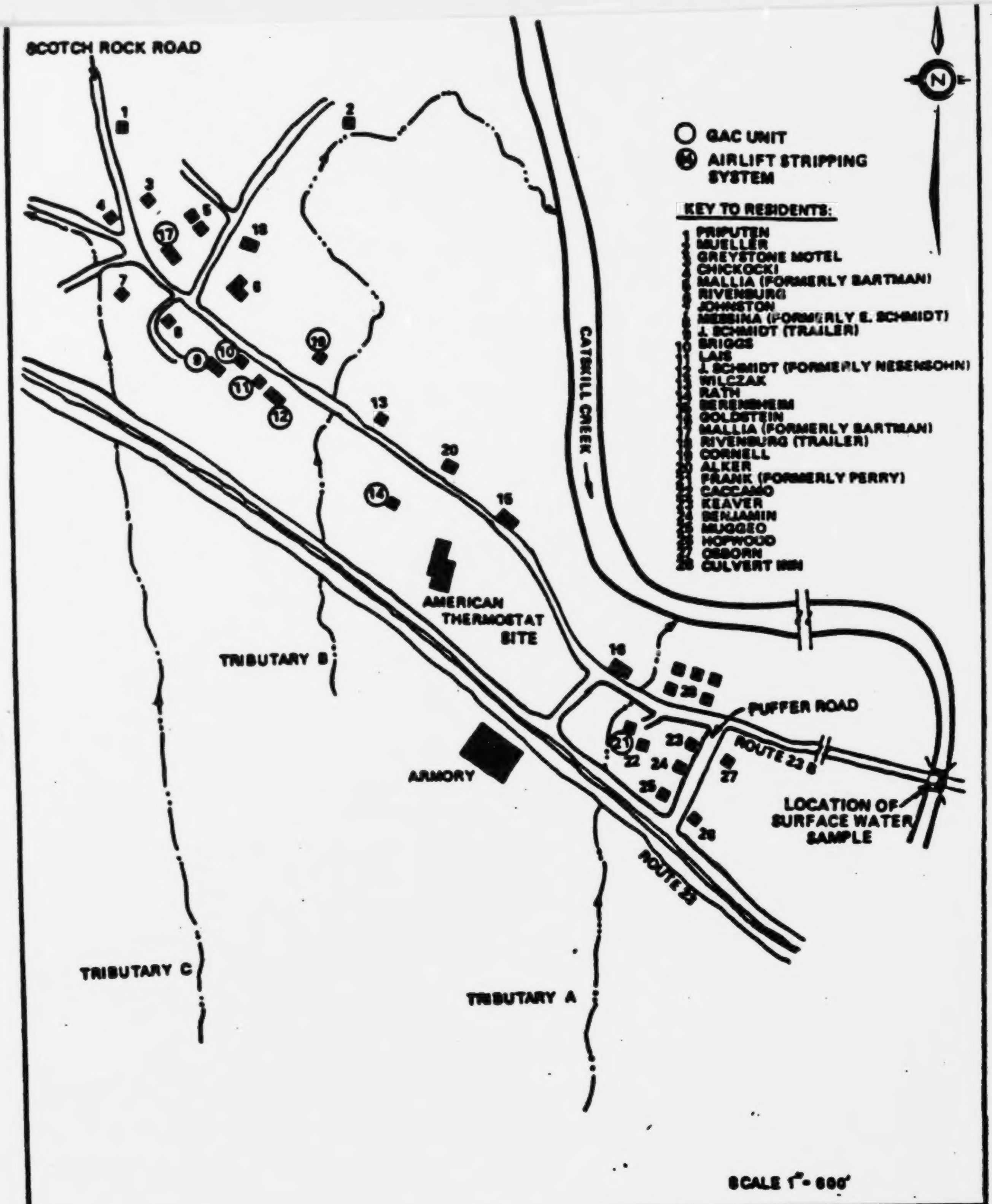

SCOTCH ROCK ROAD
N
GAC UNIT
AIRLIFT STRIPPING SYSTEM
KEY TO RESIDENTS:
1 PRIPUTEN
2 MUELLER
3 GREYSTONE MOTEL
4 CHICKOCKI
5 MALLIA (FORMERLY BARTMAN)
6 RIVENBURG
7 JOHNSTON
8 MESSINA (FORMERLY E. SCHMIDT)
9 J. SCHMIDT (TRAILER)
10 BRIGGS
11 LAIS
12 J. SCHMIDT (FORMERLY NESENSOHN)
13 WILCZAK
14 RATH
15 BERENSHEIM
16 GOLDSTEIN
17 MALLIA (FORMERLY BARTMAN)
18 RIVENBURG (TRAILER)
19 CORNELL
20 ALKER
21 FRANK (FORMERLY PERRY)
22 CACCAMO
23 KEAVER
24 BENJAMIN
25 MUGGEO
26 HOPWOOD
27 OSBORN
28 CULVERT INN
CATSKILL CREEK
AMERICAN THERMOSTAT SITE
TRIBUTARY B
TRIBUTARY C
TRIBUTARY A
ARMORY
PUFFER ROAD
ROUTE 23 B
ROUTE 23
LOCATION OF SURFACE WATER SAMPLE
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
SCALE 1" = 600'

FIGURE 3

SURROUNDING RESIDENTIAL WELL LOCATIONS - SOUTH CAIRO, N.Y.

SOURCE: NUS CORP. REMEDIAL ACTION MASTER PLAN DECEMBER, 1983

In 1983, EPA's contractor prepared a Remedial Action Master Plan for the site.

AT ceased operations in May 1985. In November 1985, several of AT's creditors filed an involuntary bankruptcy petition against the Corporation pursuant to Chapter 7 of the Bankruptcy Code. The bankruptcy court subsequently entered an order for relief against AT.

Since June 1985, EPA has been sampling wells in the area and has been maintaining the previously installed carbon filtration units. In addition, EPA installed two new carbon filtration units on contaminated private wells, and installed an air stripping system on a highly contaminated well, and drilled a new well in an attempt to locate a clean water supply.

CURRENT SITE STATUS

Sampling was initially conducted at the AT site in May 1981 by NYSDOH and NYSDEC. As summarized in Table 1, the results of groundwater analyses revealed the presence of certain volatile halogenated organic compounds (VHO) (TCE and PCE) in some samples from nearby residential wells. Concentrations of PCE exceeded 1 part per million (ppm) in a number of groundwater samples with a maximum value of 100 ppm observed in one well water sample. Concentrations of TCE were significantly lower.

Only one soil sample was collected from the dumping area (see Figure 1) at the southern end of the AT site in March 1981. This sample contained measureable levels of both PCE (3400 ppm) and TCE (0.5 ppm), and traces of 1,1,1-trichloroethane (0.02 ppm).

VHOs were also detected in surface water samples collected during 1981 and 1982 in tributaries near the site. The principal VHO compounds detected were again PCE and TCE. In summary, from the existing data it appears that the contamination at the AT site is primarily due to VHOs, with PCE and TCE being the principal contaminants. The source of these compounds is spent degreasing solvents and sludges previously disposed of on on-site soils, in the on-site septic system(s) and/or released to surface water. The source, nature, and extent of the contamination at and around the site will be further investigated in the upcoming RI/FS.

TABLE 1

RESIDENTIAL WELLS - ANALYTICAL RESULTS (1981-1985)

AMERICAN THERMOSTAT SITE

Sample Location	Sampling Date	Trichloroethylene (ppm)	Tetrachloroethylene (ppm)
Berensheim	12/28/81	-	0.002
Briggs	6/19/81	0.002	0.220
	1/25/82	0.003	0.430
Cornell	6/24/82	0.005	0.220
Goldstein	12/28/81	-	0.003
	10/12/83	-	0.001
Lais	5/8/81	0.014	1.6
	6/19/81	0.020	1.5
	1/25/82	0.020	1.7
Nesensohn	5/19/81	0.013	1.2
	6/19/81	0.018	1.6
	6/11/82	0.011	0.95
Rath	4/6/81	-	47.0
	6/19/81	0.350	87.0
	1/25/82	-	100.0
Rivenburg	5/19/81	0.120	3.5
	6/19/81	0.140	5.8
" (before filter)	11/17/81	0.110	3.0
" (after filter)	11/17/81	-	0.004
" (storage tank)	1/25/82	0.230	9.0
" (spiked storage tank)	1/25/82	0.230	14.0
Ed Schmidt	10/12/83	-	0.007
Rath	12/11/85	<0.001	< 0.001
Schmidt	12/11/85	<0.001	< 0.001
Rivenburg	12/11/85	0.001	0.004

TABLE 1 (Cont'd)

RESIDENTIAL WELLS - ANALYTICAL RESULTS (1981-1985)

AMERICAN THERMOSTAT SITE

Sample Location	Sampling Date	Trichloroethylene (ppm)	Tetrachloroethylene (ppm)
Cornell	12/11/85	<0.001	< 0.001
Lais	12/11/85	<0.001	< 0.001
Mallia	9/4/85	<0.001	0.002
Chickocki	9/4/85	<0.001	< 0.001
Greystone Motel	9/4/85	<0.001	< 0.001
Rath	9/4/85	3.5	98.0
Mariani	9/4/85	<0.001	0.005
Frank	9/4/85	<0.001	< 0.001
Goldstein	9/4/85	<0.001	< 0.001
Wilczak	9/4/85	<0.001	0.005
Rivenburg (basement tap)	9/10/85	0.28	14.6
Schmidt (garage tap)	9/10/85	<0.001	0.011
Cornell (kitchen tap)	9/10/85	<0.001	0.003
Lais (kitchen tap)	9/10/85	<0.001	< 0.001
Lais			
" (before)	6/12/85	0.028	2.1
" (between)	6/12/85	ND	ND
" (after)	6/12/85	ND	ND
Nesensohn			
" (before)	6/12/85	0.033	3.2
" (between)	6/12/85	ND	0.001
" (after)	6/12/85	ND	ND

TABLE 1 (Cont'd)

RESIDENTIAL WELLS - ANALYTICAL RESULTS (1981-1985)

AMERICAN THERMOSTAT SITE

Sample Location	Sampling Date	Trichloroethylene (ppm)	Tetrachloroethylene (ppm)
Cornell (no filter)	6/12/85	0.094	0.54
Briggs (no filter)	6/12/85	0.004	0.44
Rivenburg			
" (before)	6/12/85	0.19	9.8
" (between)	6/12/85	0.28	10.2
" (after)	6/12/85	0.016	0.13
Ed Schmidt	6/12/85	ND	0.0071
John Schmidt	6/12/85	ND	ND
Priputen	6/12/85	ND	ND
American Thermostat Plant			
" (before)	6/12/85	ND	0.320
" (between)	6/12/85	ND	0.003
" (after)	6/12/85	ND	0.014
" (Rath)	6/12/85	ND	ND
Berensheim	6/12/85	ND	ND

Note: Dash (-) indicates not analyzed for
"ND" indicates not detected

Source: Remedial Action Master Plan, NUS Corp., December 1983, and EPA, NYSDEC, NYSDOH analytical data from 1981-1987.

ENFORCEMENT HISTORY

Four potentially responsible parties ("PRPs") have been identified in connection with the AT site: Amro; AT; Mr. Harry Moskowitz and Mr. David Moskowitz. Amro is the owner of the property on which the AT facility is located. AT was the company which operated the manufacturing facility at the site. Harry Moskowitz was the president of the now defunct AT; he is also the president of Amro. David Moskowitz is the president of AT, and was formerly the vice president and executive vice president of AT.

EPA filed a proof of claim on December 12, 1986 in the bankruptcy proceeding of AT, seeking recovery of costs incurred at the site. In addition, on October 30, 1987, the United States commenced a civil action against Amro, Harry Moskowitz and David Moskowitz pursuant to Section 107 of CERCLA for recovery of EPA's costs at the site. EPA has also sent several notice letters to the PRPs offering them the opportunity to agree to conduct or finance various response actions at the site. To date, none of the PRPs have offered to undertake or finance such activities. The most recent notice letter was sent to the PRPs on December 4, 1987. This letter gave the PRPs sixty days to make a good faith offer to conduct or finance the remedial action selected herein.

COMMUNITY RELATIONS

On December 3, 1987, EPA published a notice and brief analysis of the Focused Feasibility Study (FFS) and Proposed Remedial Action Plan (PRAP) prepared with respect to the AT site, and made these documents available to the public. EPA informed the public (including the Potentially Responsible Parties (PRPs)) of their opportunity to submit comments on the aforementioned documents on or before December 24, 1987. In addition, on December 8, 1987, EPA held a public meeting near the site to discuss the FFS and PRAP. A responsiveness summary, containing EPA's response to the significant comments received during the public comment period, is attached hereto.

PRELIMINARY PUBLIC HEALTH RISK ASSESSMENT

On the basis of existing site information and analytical results, a preliminary public health risk assessment was performed for the site. The objective of this assessment was to characterize health and environmental risks that would prevail in the absence of further remedial action. The methodology supporting this preliminary screening is described below.

PCE and TCE were chosen for evaluation, as these chemicals represent the principal contaminants detected in residential wells. Results of the most recent (1986-1987) sampling investigations indicate concentrations of PCE ranging from 0.001 ppm to 131 ppm. Concentrations of TCE ranged from 0.001 to 2.0 ppm. Both compounds are classified by EPA as being probable human carcinogens. TCE has proven carcinogenic in several strains of mice by the inhalation and oral routes and is considered weakly mutagenic. PCE is carcinogenic in mice by the inhalation route.

Because the purpose of this operable unit is to address the need for provision of an alternative water supply to the affected residents, this assessment addressed only those pathways relating to the existing groundwater contamination. These pathways include ingestion of groundwater, direct contact with groundwater via washing and/or bathing, and inhalation of contaminants volatilized during showers. Table 2 summarizes the federal Applicable or Relevant and Appropriate Requirements (ARARs).

As discussed above, the results of recent off-site groundwater sampling programs indicate the continued presence of elevated levels of PCE and TCE in residential well water samples. The measured concentrations of these contaminants may be compared to the ARARs listed in Table 3. As indicated in Table 3, EPA has recently promulgated maximum contaminant levels (MCLs) for safe drinking water for TCE (0.005 ppm) as well as several other VHOs.

Table 2

Federal Applicable or Relevant and Appropriate Requirements

1) Safe Drinking Water Act, National Primary Drinking Water Regulations, Maximum Contaminant Levels (40 CFR 141.11-141.16).

2) Other criteria, advisories and guidance such as:

   - Maximum Contaminant Level Goals
   - USEPA Drinking Water Health Advisories
   - USEPA Health Effects Assessment
   - Cancer Assessment Group National Academy of Science Guidance

3) Clean Water Act, Ambient Water Quality Criteria (45 FR 798318-79379, November 28, 1980).

4) USEPA Groundwater Protection Strategy

TABLE 3

CHEMICAL SPECIFIC - EPA ARARs

PARAMETER	SDWA MAXIMUM CONTAMINANT LEVEL	FRESHWATER QUALITY CRITERIA		(3) SDWA /MCL GOAL
		ACUTE	CHRONIC	
TETRACHLOROETHYLENE	-(2)	5.2	0.8	0(4)
TRICHLOROETHYLENE	0.005	45	21	0
1,1-DICHLOROETHYLENE	0.007	11	-	0.007
1,1,1-TRICHLOROETHANE	0.200	18	-	0.200

NOTES:

(1) Federal applicable, relevant, and appropriate requirements

(2) All concentrations in ppm. Dash indicates not established or determined

(3) SDWA/MCL is the Safe Drinking Water Act Maximum Contaminant Level

(4) Proposed as of October, 1986

MCLs are enforceable standards established pursuant to the Safe Drinking Water Act. MCLs are considered to be health protective. For drinking water contaminants, the target reference risk range associated with these standards is 10^{-4} to 10^{-6}.

Using the measured ranges of TCE and PCE reported above, in conjunction with carcinogenic potency factors developed for these constituents (USEPA, 1986), one can derive carcinogenic risk estimates for the receptors in question. Carcinogenic potency factors represent the upper 95% confidence limit of the probability of adverse response per unit intake of a chemical over a lifetime. Using these values, and assuming a daily water ingestion of two liters over a 70 year period, the resultant risk estimates associated with TCE and PCE well contamination are as follows:

Constituent	Concentration Range	Carcinogenic Risk Estimate
Tetrachloroethylene	0.001 ppm (min.)	1.5×10^{-6}
	131 ppm (max.)	1.9×10^{-1}
Trichloroethylene	0.001 ppm (min.)	3.1×10^{-7}
	2.0 ppm (max.)	6.3×10^{-4}

As illustrated above, the estimated risks associated with ingestion of groundwater, particularly PCE-contaminated groundwater, at selected residential wells (e.g., Rath and Rivenburg, where maximum PCE and TCE concentrations were measured) are significantly greater than the target reference risk range referred to previously.

Concentrations of TCE and PCE in drinking water which correspond to a 10^{-5} risk are 0.026 ppm and 0.007 ppm, respectively. As indicated in Table 1, the concentrations of these contaminants detected in residential wells near the site far exceed concentrations deemed health protective.

In addition, New York State has established water quality standards and guidance values for Class GA (used for drinking water) groundwaters. Relevant values are presented in Table 4. For TCE, a water quality standard of 0.01 ppm has been established. For PCE and TCE guidance values for Class GA waters have been established at 0.0007 ppm and 0.003 ppm, respectively. Clearly, the difference between the concentrations of these contaminants measured in residential wells near the site and their associated health protective standards and goals is significant.

TABLE 4

NEW YORK STATE WATER QUALITY STANDARDS AND GUIDANCE VALUES FOR CLASS GA GROUNDWATERS

PARAMETERS	STANDARD (ppm)	GUIDANCE VALUE (ppm)
TETRACHLOROETHYLENE	-----	0.0007
TRICHLOROETHYLENE	0.01	0.003
TRANS-1,2-DICHLOROETHENE	-----	0.05

Source: Ambient Water Quality Standards and Guidance Values, New York State Department of Environmental Conservation, Technical and Operational Guidance Report 85-W-38, July 1985.

In addition to groundwater ingestion, the potential exists for residents to be exposed to contaminants via washing or bathing. The extent of this exposure would depend on the period of time spent washing and bathing, the fraction of contaminants absorbed through the skin, and the surface area of the individual(s) exposed.

Qualitatively, evidence suggests that these two exposure pathways (inhalation and dermal absorption) present less health risk of toxicity and/or carcinogenicity than ingestion.

As a result of the risk to public health from exposure to contaminated groundwater from the AT site, remedial alternatives were evaluated to address the problem.

ALTERNATIVES EVALUATION

EPA's contractor conducted a Focused Feasibility Study (FFS) aimed at identifying and evaluating various alternatives for providing a safe alternate water supply to the affected and potentially affected residents near the AT site. During the FFS, alternatives were identified screened and analyzed in detail, as required by the NCP. The effectiveness, implementability and cost of each of the water supply alternatives were evaluated and summarized in the FFS and Proposed Remedial Action Plan (PRAP) prepared by EPA.

The FFS was developed and prepared based on the limited existing information (e.g., monitoring of 28 private wells) without the RI which will identify the contamination sources and the extent of the groundwater contamination migration plume(s). In addition, the unique geohydrological configuration around the site (e.g., groundwater exists in the irregular channels and joints of the fractured bedrock) contributed to the difficulties of predicting the site-specific contamination conditions.

A preliminary review of the existing data and information indicate that approximately 100 persons residing in the nearest 28 houses around the site are currently affected. This number represents the population which is supplied by private wells located within 1/2 mile downgradient and 1/4 mile upgradient from the AT site as shown in Figure 3. Based on this information, it appears that the groundwater contamination has migrated at least this far during the last 20 years.

It is estimated that the groundwater remediation at this site would take 20 years or more to complete. Because the extent of contaminant migration has not been adequately determined at this time, it is anticipated that the contamination would travel in both directions and with the same migration speed of the last 10 years. It is estimated that within the next 20 years the contaminant plume(s) may reach one mile downgradient and 1/2 mile upgradient from the AT site.

The existing private well monitoring data indicate that no contaminated well around the site was located outside the area between Catskill Creek and Route 23. It is also assumed at this point that the Catskill Creek and Route 23 act as boundariesfor the migration of contamination on the north and south sides of this site. Based on the above analysis, the affected and potentially affected areas are within the boundaries of one mile downgradient, 1/2/ mile upgradient, Catskill Creed and Route 23 (see Figure 4). Approximately 80 homes are located within those boundaries.

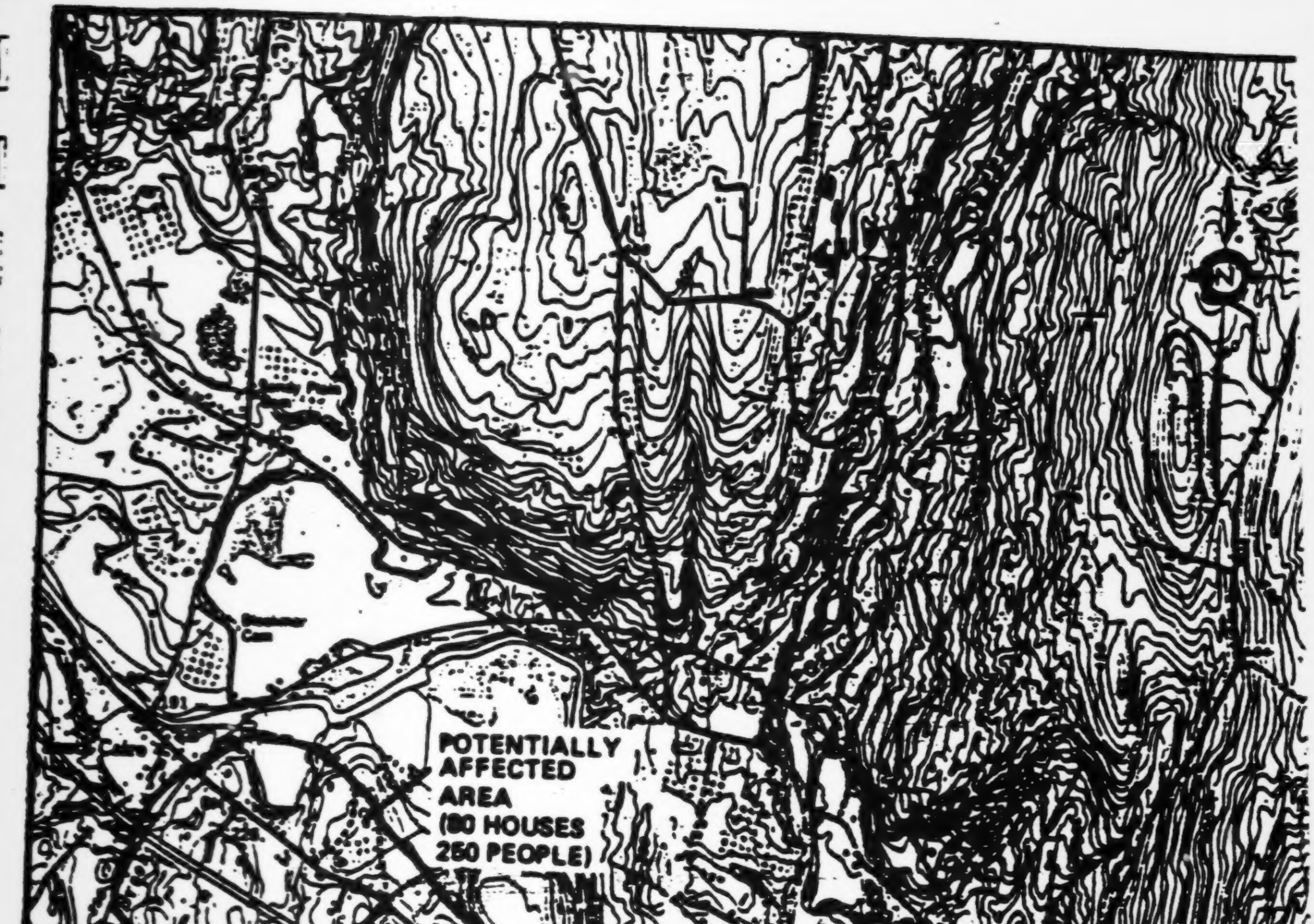

POTENTIALLY AFFECTED AREA (80 HOUSES 250 PEOPLE)
1/2 MILE
1 MILE
CATSKILL
CREEK
Flat
N

FIGURE 4

PROPOSED WATER SUPPLY SERVICE AREA

Within the water supply service area, it is estimated that approximately 250 persons residing in approximately 80 houses would be ultimately affected and need to be provided with an alternate water supply.

All but seven of the alternatives which underwent initial screening during the FFS were eliminated. Table 2 lists the water supply alternatives which were evaluated during the initial screening phase, and summarizes the reasons why certain alternate water supply options were rejected.

The alternatives which were retained for a detailed evaluation are as follows:

ALTERNATIVE 1	NO ACTION
ALTERNATIVE 3B	TANKER TRUCK AND ELEVATED STORAGE TANK
ALTERNATIVE 4A-1	PIPELINE FROM LEEDS
ALTERNATIVE 4A-2	PIPELINE FROM SANDY PLAINS ROAD
ALTERNATIVE 4A-3	PIPELINE FROM RUDOLPH WEIR ROAD
ALTERNATIVE 4C	NEW WELL FIELD
ALTERNATIVE 4D	WATER SUPPLY FROM TRAILER PARK WELLS

DESCRIPTION OF ALTERNATIVES

With the exception of Alternative 1 (No Action), each water supply alternative was evaluated on the assumption that it would need to meet a typical domestic demand for a rural area of 75 gallons per capita per day (gpcd) (approximately 15 gallons per minute (gpm) for 250 persons). The provision of such an alternate water supply system for the potentially affected residents is consistent with Section 121 of the CERCLA, which requires that remedial actions assure protection of human health, attain ARARs, and be cost-effective. This operable unit does not satisfy the statutory preference for treatment. This statutory preference will be addressed in the second operable unit.

TABLE 5
SUMMARY OF ALTERNATE WATER SUPPLY OPTIONS EVALUATED IN INITIAL SCREENING

Water Supply Alternative	Status	Reason for Rejection
1. No Action	Retained	—
2. Point-of-Use Treatment		
2A. Install Carbon Filters on 72 Houses O&M of systems	Rejected	Fails to provide completel safe water supply, complex O&M
2B. Centralized Well Water Treatment System	Rejected	Fails to provide permanent and long-term remedy, comp construction
3. Point-of-use Water Supply		
3A-1. Tanker Truck Delivery	Rejected	Fails to provide standard domestic water supply, considered temporary solution only
3A-2. Bottled Water Delivery	Rejected	Fails to provide standard domestic water supply, considered temporary solution only
3B. Tanker Truck and Storage Tank	Retained	—
3C. Collection of Rainwater	Rejected	Unproven, unreliable, compl construction
4. Alternate Water Sources		
4A. Catskill Water Supply System		
4A-1. Pipeline from Leeds	Retained	—
4A-2. Pipeline from Sandy Plains Road	Retained	—
4A-3-Pipeline from Rudolph Weir Road	Retained	—
4B. New Surface Water Supply (Catskill Creek)	Rejected	Unproven, uncertain useful life, complex O&M and construction, major negativ environmental impact
4C. New Well Field	Retained	—
4D. Water Supply from Trailer Park Wells	Retained	--

ALTERNATIVE 1 - NO ACTION

The no-action alternative includes long-term monitoring of the 28 potentially affected homes immediately surrounding the AT site. Water samples taken from these homes every 3 months would be analyzed for organic contaminants. The existing treatment systems, including one airlift stripper and seven carbon filter units, would be operated and maintained. This alternative would not, however, provide for any additional treatment units which might be required if contamination is detected at any of the other potentially affected residences.

No construction of major facilities or installation of large equipment would be required for this alternative. Only monitoring and operation and maintenance (O&M) services would be provided.

ALTENATIVE 3B - WATER DELIVERY BY TANKER TRUCK, ELEVATED STORAGE TANK, WATER LIFT PUMP AND WATER DISTRIBUTION SYSTEM

Alternative 3B is a point-of-use water supply system utilizing an alternative water source and a water distribution system. This water supply system would provide a standard rural water demand by trucking water from the nearby water district.

The proposed water supply system would consist of two tractor trucks, two 5,000 gallon tanker trailers, an elevated storage tank, a water lift pump and a water distribution system. The nearest municipal water supply system is the Catskill Water Supply system where the water loading station for trucking could be located either at the Potuck Reservoir Water Treatment Plant or at the existing transmission pipeline which crosses Route 23B in Leeds. Purchase of treated water from this water supply system would require a delivery by tanker truck along public roadways. It is estimated that the total water demand for the proposed service area would be approximately 0.02 million gallons per day (MGD) and that it would require four deliveries per day at a distance of approximately twenty miles each round trip.

An elevated hydrostorage tank with a 50,000 gallon capacity would be required to provide adequate storage to compensate for water demand fluctuations. The preliminary location of the water tower would be at the AT site, where an approximately 55 feet (ft) of static hydraulic head will be available (based on an elevation of 255 ft at the site and an elevation of 200 ft at the furthest residence). The water tower would have a 80 ft height to provide a normal working pressure range of 35 to 60 pounds per square inch.

A 6-inch diameter ductile iron pipe would be installed as the primary transmission pipe for a total length of approximately 11,000 ft from the water tower to the proposed service area and along Route 23B. As shown in Figure 5, a 4-inch diameter branch pipe would be installed along the streets off Route 23B for the domestic water distribution system. The total length of the branch pipes would be approximately 7,500 ft, providing hookups for approximately 80 homes. The installation of water supply pipeline would include rock excavation, dewatering, loam excavation, restoration and repavement.

ALTERNATIVE 4A-1 - EXTENDED CATSKILL WATER SUPPLY PIPELINE FROM LEEDS

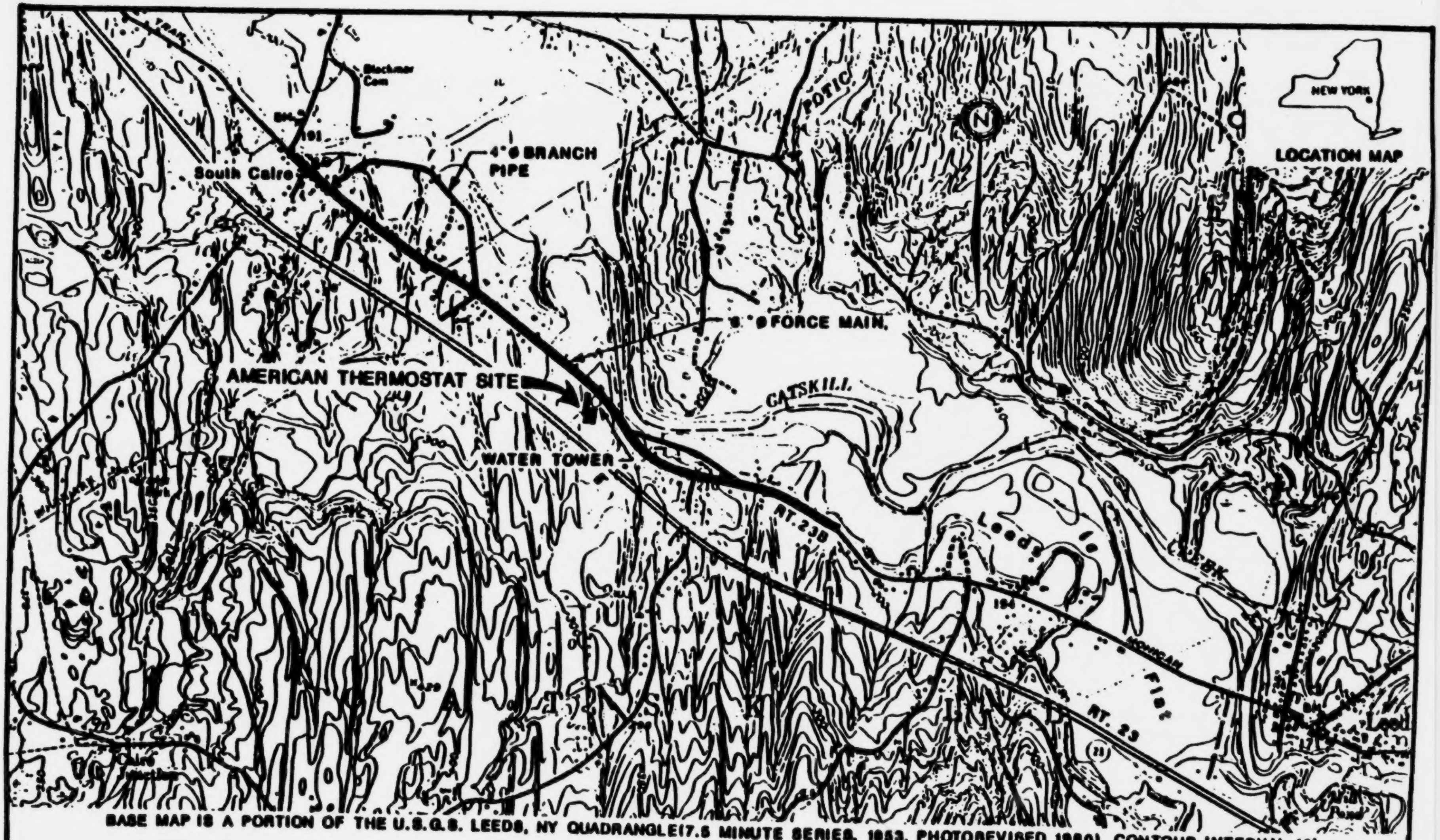
Alternative 4A-1 consists of purchasing water from the Catskill Water Supply system and extending the Catskill water supply pipeline from Leeds along Route 23B. The current average daily demand for Catskill is approximately 1.7 million gallons per day (MGD). To supply the potentialy affected residences, it is estimated that the additional load on the system would be 0.02 MGD.

As shown in Figure 6, the proposed system would connect to the existing pipeline by means of a water diversion station in Leeds. A 6-inch diameter ductile iron pipeline would be installed along Route 23B as the primary transmission pipe for a total length of approximately 18,000 ft. The pipeline would cross 400 ft of Catskill Creek by submerged installation near the historic bridge.

A booster pumping station would be required to provide adequate flow and pressure for domestic conditions. Approximately 7,500 feet of 4-inch diameter ductile iron branch pipe would be installed along the streets off Route 23B to supply each potentially affected residence. Approximately 80 homes would be connected to the distribution system.

ALTERNATIVE 4A-2 - EXTENDED CATSKILL WATER SUPPLY PIPELINE FROM SANDY PLAINS ROAD

Alternative 4A-2 is similar to alternative 4A-1, except that the tie-in to the existing Catskill pipeline would be at Sandy Plains Road. As shown in Figure 7, the proposed system would utilize a water diversion station on Sandy Plains Road and the pipeline would cross privately-owned land. In addition,

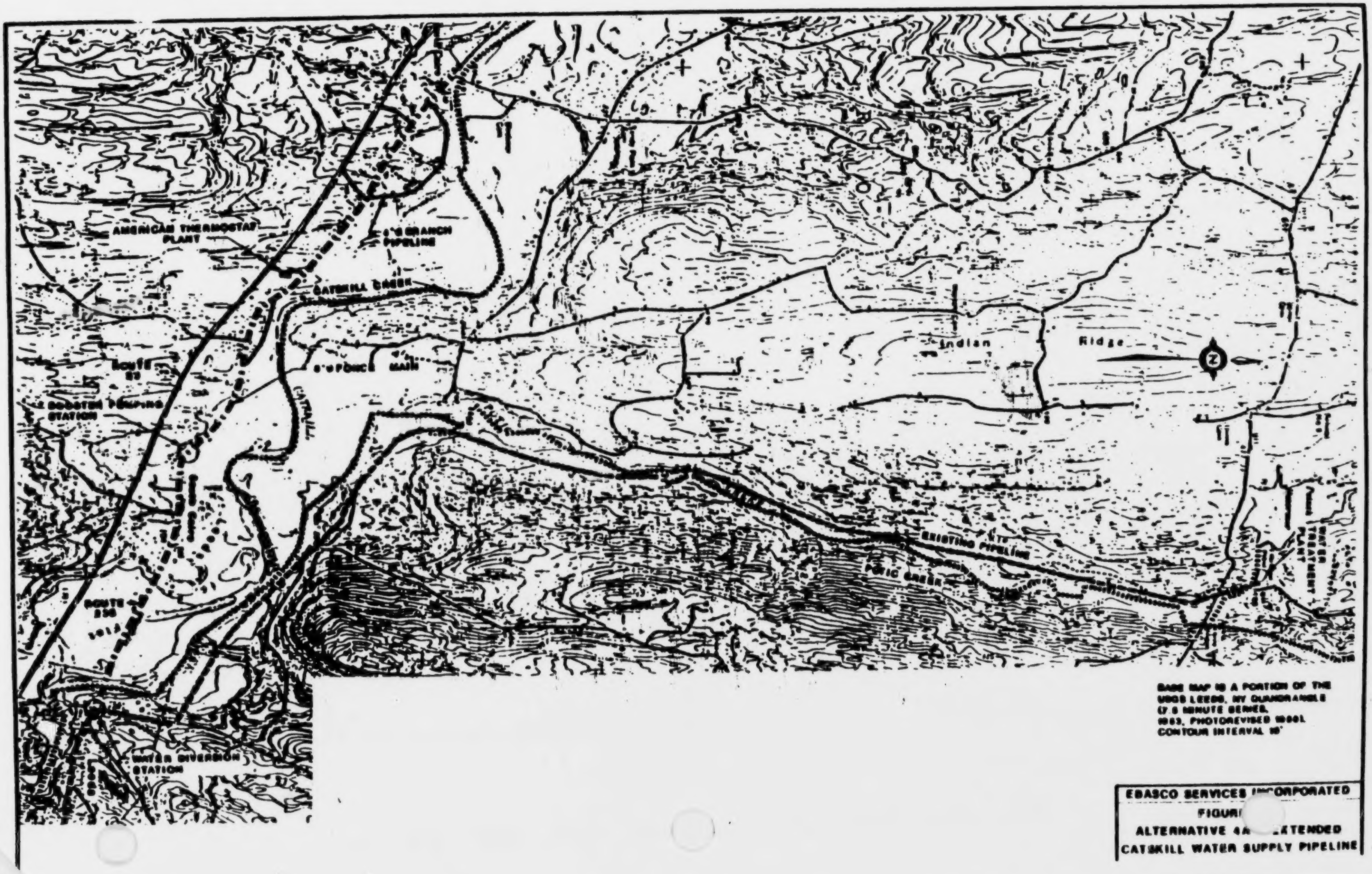

South Cairo
Blackmer Cem
4" Ø BRANCH PIPE
8" Ø FORCE MAIN.
POTIC
AMERICAN THERMOSTAT SITE
WATER TOWER
CATSKILL
RT. 23B
RT. 23
Leeds
Flat
CR. BK.
LOCATION MAP
NEW YORK
N
Cairo Junction

BASE MAP IS A PORTION OF THE U.S.G.S. LEEDS, NY QUADRANGLE(7.5 MINUTE SERIES, 1953, PHOTOREVISED 1980). CONTOUR INTERVAL 10'.

SCALE 1" - 2000'

EBASCO SERVICES INCORPORATED

FIGURE 5
ALTERNATIVE 3B -
WATER TANKER TRUCK.


AMERICAN THERMOSTAT PLANT
BRANCH PIPELINE
CATSKILL CREEK
FORCE MAIN
ROUTE 23
BOOSTER PUMPING STATION
ROUTE 385
WATER DIVERSION STATION
Indian Ridge
EXISTING PIPELINE
POTIC CREEK
WATER TREATMENT PLANT

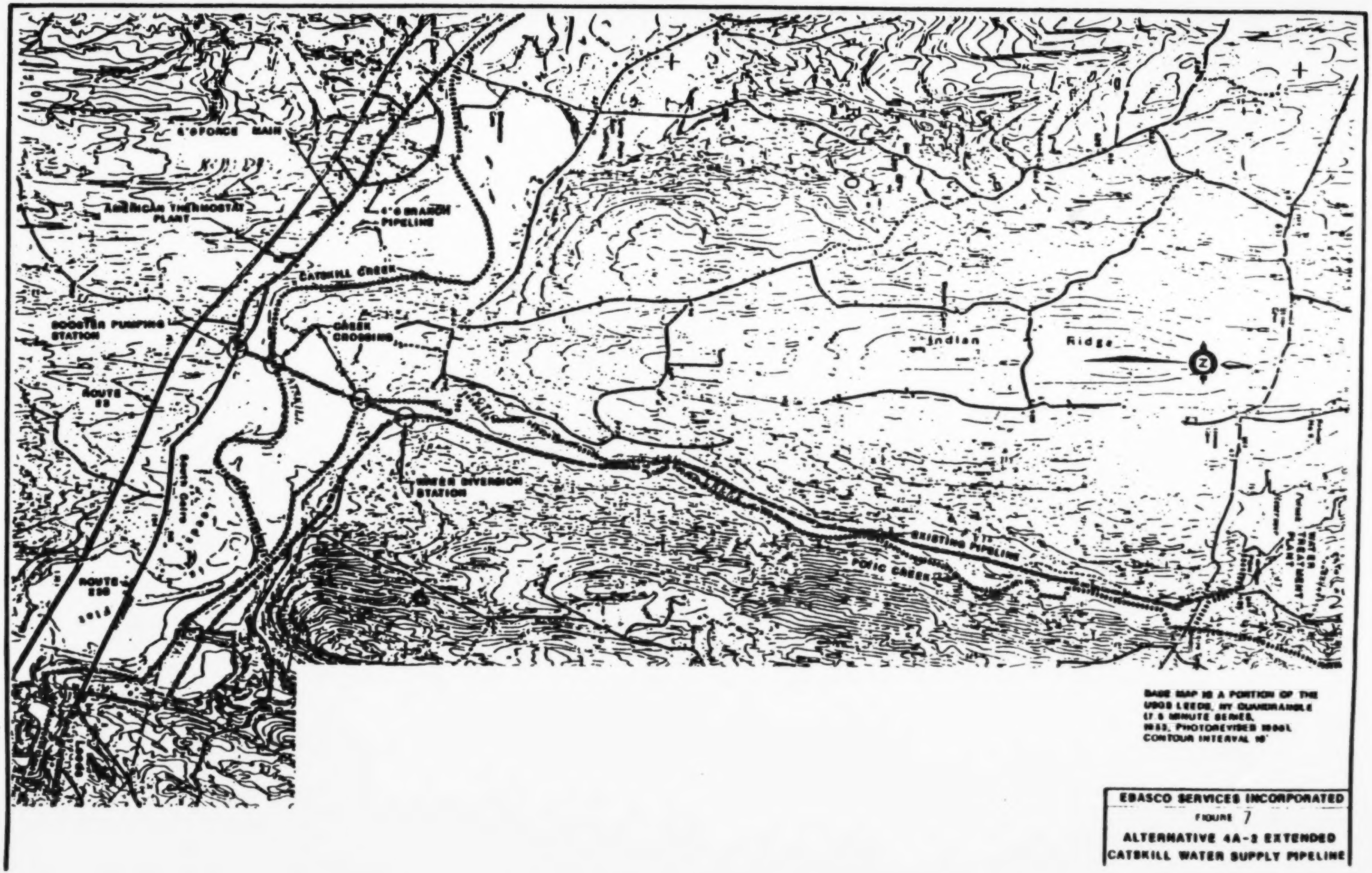
BASE MAP IS A PORTION OF THE
USGS LEEDS, NY QUADRANGLE
(7.5 MINUTE SERIES,
1963, PHOTOREVISED 1980)
CONTOUR INTERVAL 10'

EBASCO SERVICES INCORPORATED

FIGUR

ALTERNATIVE 4A EXTENDED

CATSKILL WATER SUPPLY PIPELINE



6"Ø FORCE MAIN
AMERICAN THERMOSTAT PLANT
4"Ø BRANCH PIPELINE
CATSKILL CREEK
BOOSTER PUMPING STATION
CREEK CROSSING
ROUTE 23
South Cairo
ROUTE 23B
WATER DIVERSION STATION
EXISTING PIPELINE
POTIC CREEK
Indian
Ridge
WATER TREATMENT PLANT
Leeds

BASE MAP IS A PORTION OF THE
USGS LEEDS, NY QUADRANGLE
(7.5 MINUTE SERIES,
1953, PHOTOREVISED 1980)
CONTOUR INTERVAL 10'

EBASCO SERVICES INCORPORATED

FIGURE 7

ALTERNATIVE 4A-2 EXTENDED
CATSKILL WATER SUPPLY PIPELINE

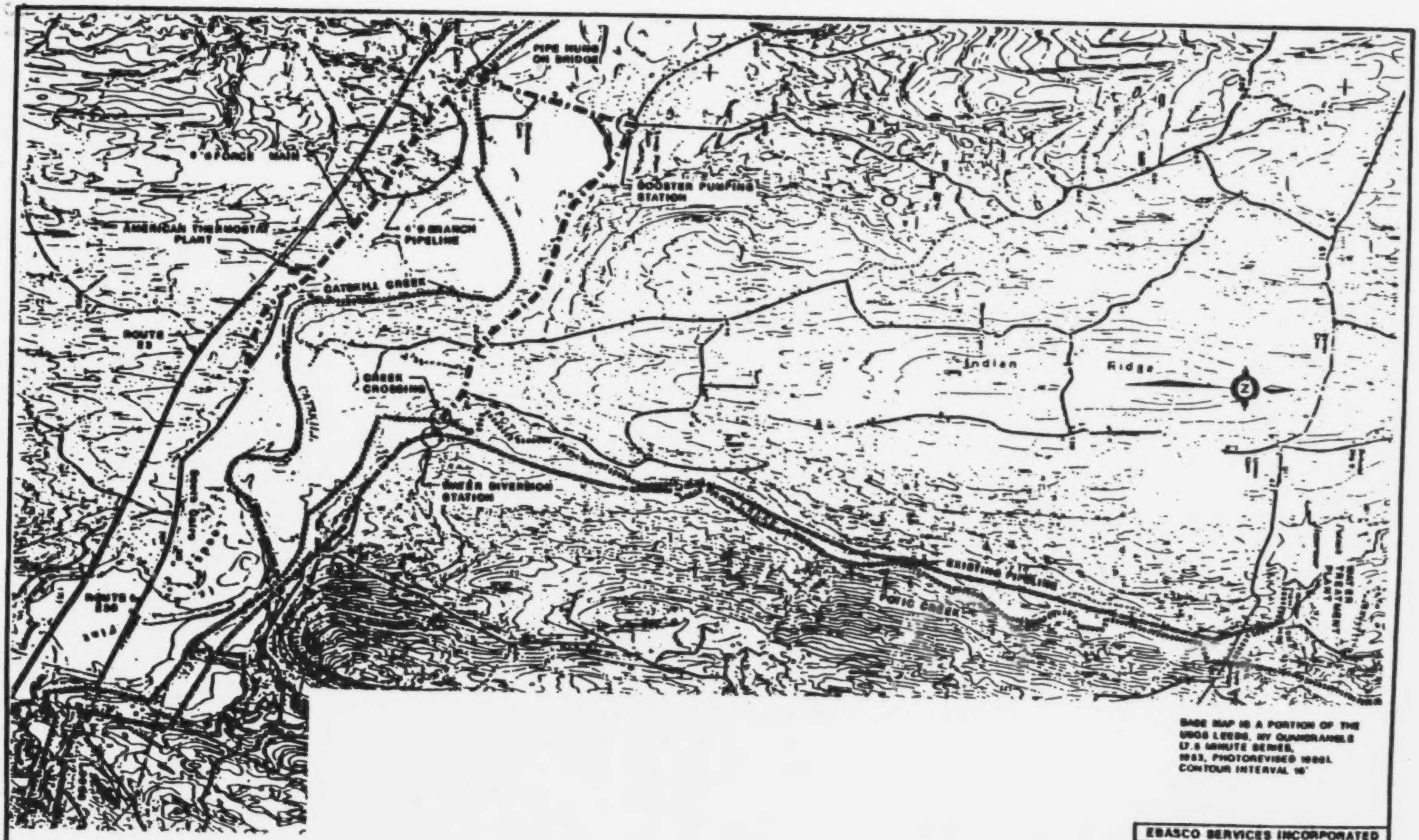
both the 60 ft. Potic and 200 ft Catskill creeks would be crossed by submerged installation. A 6-inch diameter ductile iron pipeline of approximately 13,000 ft in length, would serve as the primary transmission pipe along Route 23B. A booster pumping station would also be required to supply adequate flow and pressure for domestic conditions. The same amount of branch piping as Alternative 4A-1 would be installed and the service area would include the same 80 homes.

ALTERNATIVE 4A-3 - EXTENDED CATSKILL WATER SUPPLY PIPELINE FROM RUDOLPH WEIR ROAD

Alternative 4A-3 is similar to Alternatives 4A-1 and 4A-2, except that in this option the tie-in to the existing Catskill water supply pipeline would be near Rudolph Weir Road. As shown in Figure 8, the proposed system would have a diversion station on the east side of Potic Creek. A 6-inch diameter ductile iron pipeline, approximately 23,000 ft long, would serve as the primary distribution pipe. The extension would cross 60 ft Potic Creek by submerged installation and would be hung from an existing 200 ft steel truss bridge over Catskill Creek at Route 67 in Cairo. An identical booster pumping station in this case would be located at the intersection of Route 67 and Sandy Plains Road. The same amount of branch piping would be installed and the service area would include the same 80 homes.

ALTERNATIVE 4C - NEW WELL FIELD WATER SUPPLY SYSTEM

Alternative 4C consists of developing a new well field to provide a water supply system for the affected and potentially affected area. As indicated previously, the Plattekill Formation, located throughout the upland area where the AT site is located consists mainly of sandstones, siltstones and shales. Groundwater is found almost exclusively in bedrock fracture zones and joints in this area. Yields of 20 gpm are documented for wells completed in sandstone (Berdan, 1954). Some currently installed deep wells located near the stream bed areas have operated in the range of 30 to 60 gpm. This is due to two important factors: the area adjacent to the creek consists of loamy soil formed in alluvium which has favorable recharge characteristics, and the direction of groundwater flow is expected to be towards the creek.


PIPE HUNG ON BRIDGE
6" FORCE MAIN
BOOSTER PUMPING STATION
AMERICAN THERMOSTAT PLANT
4" Ø BRANCH PIPELINE
CATSKILL CREEK
ROUTE 23
CREEK CROSSING
CATSKILL
WATER DIVERSION STATION
South Cairo
Indian Ridge
N
EXISTING PIPELINE
POTIC CREEK
WATER TREATMENT PLANT

BASE MAP IS A PORTION OF THE USGS LEEDS, NY QUADRANGLE (7.5 MINUTE SERIES, 1953, PHOTOREVISED 1980). CONTOUR INTERVAL 10'

EBASCO SERVICES INCORPORATED

FIGURE 8

ALTERNATIVE 4A-3 EXTENDED CATSKILL WATER SUPPLY PIPELINE

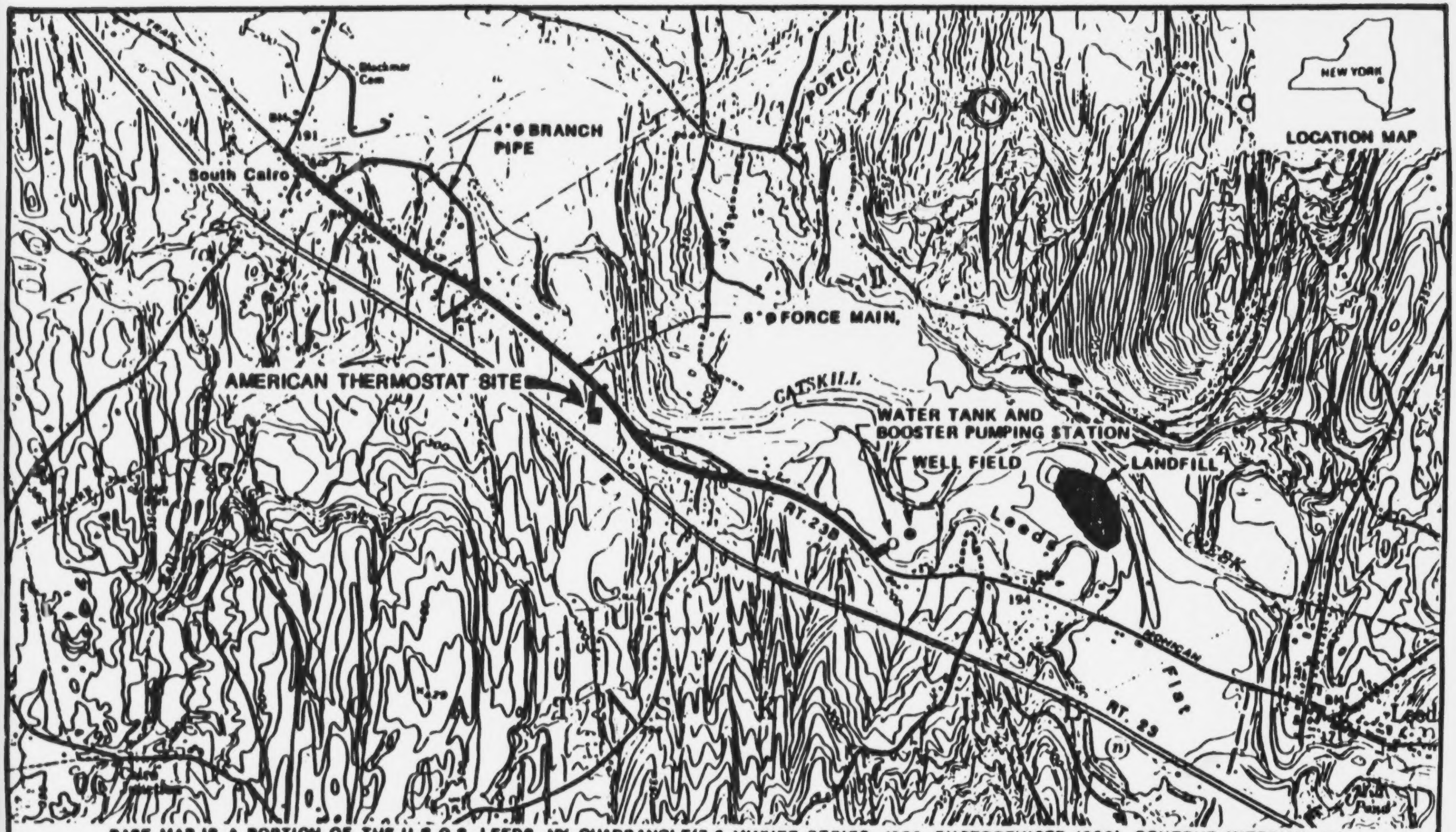
Based on these factors, the preliminary location of the proposed new well field would be approximately one mile upgradient of the site between Catskill Creek and Route 23B as shown in Figure 9. Use of the Sandstone aquifer would require new wells approximately 400 ft deep, and wells in this aquifer would have a safe yield of approximately 40 gpm each. The groundwater pumped from this aquifer is expected to be good quality potable water after chlorination.

Based on the above geohydraulic information, two 400 ft deep wells of 6-inch diameter and 400 ft deep would provide a total of 75 gpm, sufficient for the nearby affected residents. It is estimated that a reinforced concrete ground storage tank with a 50,000 gallon capacity and a booster pumping station would be required to provide the necessary pressure and flow. A 6-inch ductile iron force main of approximately 13,000 ft would be required from the water storage tank to the western end of the proposed service area along Route 23B. A total of approximately 7,500 ft of 4-inch diameter branch pipeline along the side streets off Route 23B would be required for the domestic water distribution system which will have hook-ups for approximately 80 homes.

ALTERNATIVE 4D - EXTENDED TRAILER PARK WELL WATER SUPPLY SYSTEM

Alternative 4D is similar to Alternative 4C in that it would use uncontaminated groundwater from a well field which is located approximately 3/4 mile upgradient from the AT site. A trailer park, located off Route 23B, consists of roughly 43 trailers and is currently expanding to accommodate an additional 37 units. One older well and one which was recently drilled could provide a combined flow of approximately 70 gpm. Since this is considerably more than the instantaneous demand at the trailer park, it could be possible to extend this system to supply the potentially affected area near the AT site. An agreement would have to be negotiated with the owner of the trailer park in order to implement this alternative.

The combined flow from the two trailer park wells would have to be chlorinated and pumped to a reinforced concrete ground storage tank with a 50,000 gallon capacity. As shown in Figure 10, the proposed distribution system would include the installation of a 12,000 ft, 6-inch diameter ductile iron pipeline along Route 23B as the primary transmission pipe. The water storage tank and booster pumping station would provide a buffer against fluctuations in demand while maintaining an adequate supply of water to meet a typical rural demand of 75 gpcd.


LOCATION MAP
NEW YORK
South Cairo
Blackmar Cem
4" Ø BRANCH PIPE
POTIC
8" Ø FORCE MAIN.
AMERICAN THERMOSTAT SITE
CATSKILL
WATER TANK AND BOOSTER PUMPING STATION
WELL FIELD
LANDFILL
Leeds
RT. 23B
RT. 23
MOHICAN
Flat
194
BK

BASE MAP IS A PORTION OF THE U.S.G.S. LEEDS, NY QUADRANGLE(7.5 MINUTE SERIES, 1953, PHOTOREVISED 1980). CONTOUR INTERVAL 10'.,

SCALE 1" - 2000'

EBASCO SERVICES INCORPORATED

FIGURE 9

ALTERNATIVE 4C -
NEW WELL FIELD
WATER SUPPLY SYSTEM

Approximately 7,500 feet of 4-inch diameter ductile iron branch pipe would be installed along the streets off Route 23B to supply each potentially affected residence. A total of 80 homes would be connected to the distribution system.

EVALUATION CRITERIA

The above seven alternatives were evaluated using evaluation criteria derived from the NCP and CERCLA. These criteria relate directly to factors mandated by CERCLA in Section 121 and to the maximum extent practicable, EPA's Interim Guidance on Selection of Remedy (December 24, 1986 and July 24, 1987). The primary objective of this operable unit is to provide safe drinking water to the current and potentially affected residents. This operable unit does not address a preference for treatment. In addition, the reduction of toxicity, mobility or volume of waste is not addressed, but will be addressed in the subsequent operable unit. The criteria which are applicable to the selection of an alternate water supply system for the AT site are as follows:

° EFFECTIVENESS

- Protection of public health and welfare
- Minimization of exposure pathways
- Adverse environmental impacts
- Operation and maintenance complexity

° IMPLEMENTABILITY

- Technical feasibility and availability
- Constructability
- Timeliness
- Institutional requirements (public acceptance, permits)
- Safety

° COST

- Capital cost
- Operation and maintenance cost
- Present worth cost
- Sensitivity analysis

EVALUATION PROCESS

This section presents a detailed evaluation of each of the alternatives which passed the initial screening. The detailed evaluation process includes:

° Refinement and confirmation of the appropriateness of each water supply alternative with respect to site conditions;

- An assessment of the extent to which the alternative is expected to effectively prevent exposure, minimize threats to and provide adequate protection of public health and welfare and the environment (Evaluation of Effectiveness);
- Evaluation in terms of technical feasibility and availability, constructability, timeliness, institutional requirements and safety (Evaluation of Implementability); and
- Detailed cost estimation including capital cost, annual operation and maintenance cost and distribution of cost over time.

Effectiveness

Effectiveness is evaluated in terms of performance, reliability, public health protection, and environmental impacts.

Performance is the ability to effectively perform the intended functions. Performance of a water supply alternative is evaluated based on two factors: productiveness and useful life. Productiveness refers to the quantity and quality of the water supply which an action will provide for the potentially affected residences. The useful life is the length of time the level of productiveness can be maintained.

Reliability of a water supply alternative is evaluated in terms of O & M requirements and demonstrated performance at similar sites. Evaluation of O & M includes availability of labor and materials and the frequency and complexity of the necessary O&M. Technologies requiring frequent or complex operation and maintenance activities are considered less reliable. The evaluation of demonstrated performance includes an estimate of the probability of failure for each water supply alternative.

Public health protection of a water supply alternative is evaluated based upon assessing how well the alternative satisfies the health-based remedial objectives, i.e., prevents ingestion of and direct contact with the contaminated groundwater. The ARARs against which the protectiveness of the various alternatives may be judged are summarized in Tables 2 and 3. The qualitative evaluation and comparison of public health impacts and protection is focused on the public health risk reduction resulting from implementing each water supply alternative.

Environmental impacts are compared based on the expected environmental results for the seven water supply alternatives and their relative beneficial and adverse effects on the environment. Effects of substantial earthwork, construction of submerged creek crossing support trenches, and the associated adverse traffic impacts are also considered.

- ### Performance

Alternative 1 - No Action

This alternative includes a long-term monitoring program for twenty-eight houses near the site which have a high potential of contamination in the near future and a long-term O&M program for the existing eight individual point-of-use treatment systems. The periodic monitoring program will not provide any mitigative measures. The continuous O & M would only be a partial and temporary solution for the present problem.

This alternative requires separate O & M for each individual house which will have a lower effectiveness and efficiency than for a centralized treatment system. The O & M consists primarily of replacement of carbon filters and cleaning of the airlift stripping unit. With proper operation and adequate maintenance, these point-of-use treatment systems can supply safe drinking water for each individual resident. It is estimated that carbon filter replacement would be required once every six months, and the inspection, adjustment and repair would be required on a weekly basis for the airlift stripping system.

Alternative 3B - Water Delivery By Tanker Truck, Elevated Storage Tank, Water Lift Pump and Water Distribution System

Under this alternative, a permanent small municipal water supply system would be installed to provide a domestic water demand (75 gpcd). Except for the type of water delivery, this community water supply system is a standard rural water supply system. Since the daily water demand is approximately 0.02 MGD water transport by tanker trucks is highly feasible and practical. The effectiveness and efficiency of this alternative is slightly lower than the pipeline transport system.

The useful life of a community water distribution system is normally over 30 years, but requires long-term O & M. The tanker truck would have a life of approximately 10 years based on a 100 mile daily drive.

Alternative 4A-1 - Extended Catskill Water Supply Pipeline From Leeds

Under this alternative, a water transfer and distribution system would be installed to connect with an existing and nearby municipal water supply system, thereby providing safe drinking water to the designated service area. The Catskill Water Supply District has a water treatment design capacity of 2.8 MGD at the Potuck Plant, which is capable of providing more than 0.5 MGD out of the current district area. The Potuck Water Plant supplies the district water demands in compliance with established drinking water criteria. This alternative would be an expansion project of the Catskill Water Supply District.

This alternative is very effective, since the use of an alternative water source, which is a proven technology, would terminate the use of contaminated groundwater and the associated potential exposure pathways. A booster pumping station would be installed to ensure adequate water flow and pressure to the potentially affected area.

The useful life of a community water supply system is normally over 30 years and this system would become a permanent public facility under proper O&M.

Alternative 4A-2 - Extended Catskill Water Supply Pipeline From Sandy Plains Road

This alternative is similar to Alternative 4A-1 except for a different water transfer pipeline route. The water diversion pipeline along Sandy Plains Road has to cross both Catskill Creek and Potic Creek, but will have shorter distance (approximately 4,000 ft) than Alternative 4A-1. Accordingly, the booster pumps will require lower pressure head and the pipeline maintenance will be substantially reduced. The effectiveness and efficiency of this alternative for providing safe drinking water is equivalent to Alternative 4A-1.

This public water supply system would be very effective in providing a standard rural water demand, and the use of an alternate water source would eliminate the exposure pathways of ingestion and direct contact with contaminated groundwater. With O & M by the appropriate state or local entities, the level of effectiveness would remain the same over a long-term period.

Similarily, the useful life of this alternative would be over 30 years since it would become a permanent public facility.

Alternative 4A-3 Extended Catskill Water Supply Pipeline From Rudolph Weir Road

This alternative would have a longer water transfer pipeline along Rudolph Weir Road, and the booster pumps would require higher pressure head than Alternative 4A-1. The standard water works criteria would govern construction of the water supply extension. The alternative water supply source concept has been proven to be effective at similar sites where alternate supplies have been installed. Therefore, the effectiveness and efficiency of this alternative is very good.

The useful life of a public water supply system is normally over 30 years but would require long-term operation and maintenance. As a portion of the Catskill Water Supply District, the useful life of this alternative would be permanent.

Alternative 4C - New Well Field Water Supply System

The effectiveness of a new well field water supply is considered to be good, but it is unproven for long-term operation. The potential new well field would be located along the banks of Catskill Creek based on the favorable recharge characteristics of this location, and the assumption that groundwater is flowing towards the creek. The expected yield of deep wells in this area may vary seasonally. Based on current operational results of two trailer park wells which were installed in this area in the Summer of 1987, the effectiveness of this alternative is good.

An old municipal landfill, however, is located approximately 1/2 mile upgradient of the new well field, and could become a potential contamination source in the future.

Alternative 4D - Extended Trailer Park Well Water Supply System

Two deep wells for trailer park use were installed approximately one mile upgradient of the AT site. The total combined yield is approximately 70 gpm, which is sufficient to serve both the trailer park and the potentially affected area. The well water is not contaminated and meets the drinking water criteria. The installation of an elevated storage tank and a water distribution system will create an independent water supply district and provides a standard rural water supply.

This alternative will accomplish the design objectives (75 gpcd, 35 to 60 psi) for short-term operation, but its ability to maintain the same level for long-term operation is uncertain as in the case of Alternative 4C. The effectiveness of this alternative is high based on the current operational results.

The trailer park wells are facing a potential contamination threat from both the AT site and the municipal landfill. There is insufficient information to confirm and quantify this contamination potential at this time. The useful life of this alternative is, therefore, unknown and depends upon the migration of the nearby contamination sources.

- Reliability

Alternative 1 - No Action

To maintain the effectiveness of this alternative requires intensive operation and maintenance of an airlift stripping system and seven carbon filter systems. Vendor O&M may be required for the airlift stripping system.

Any potential scaling and bio-fouling will result in failure of the air stripper to remove volatile organics. Weekly inspection, adjustment, repair and cleaning would be required for normal operation. The level of operator training required would be intensive and specific.

Periodic monitoring and replacement of carbon filter s would have difficulty maintaining the same effectiveness for safe drinking water, because the groundwater contamination is changing due to the continuous migration. The possibility of replacing carbon filters after their exhaustion is high, therefore, the possibility of failing to provide safe drinking water is also high. The replacement of exhausted filters and well water sampling and analysis requires well-trained and experienced technicians.

Alternative 3B - Water Delivery by Tanker Truck, Elevated Storage Tank, Water Life Pump and Water Distribution System

Labor and materials are readily and commercially available for all components of this alternative. The operation and maintenance requirements are not complex. This alternative will create a new water supply district which would require independent administrative, financial and technical resources.

This alternative would require daily water deliveries by tanker trucks and periodic maintenance of the water tower and water distribution system. The possibility of failure due to truck maintanance problems. and adverse weather conditions is low because the water tower would have sufficient storage for approximately 10 days normal water demand, and a standby truck would be provided. Other failure due to pipe leakage is rarely possible within its useful life.

Alternative 4A-1 - Extended Catskill Water Supply Pipeline From Leeds

This alternative would divert water from the Catskill Water District's 16-inch transfer line to the proposed service area by means of a 12-inch diameter pipe along Route 23B from Leeds. The extended water distribution facilities including water diversion station, booster pumping station, force main and domestic connections are made from readily available material and technologies. The O&M of public water works systems is straightforward and requires no special technologies. This alternative would not create an independent water district, but would instead be governed by the Catskill Water Supply District.

The probability of a public water works failure is generally low because an emergency water source is provided, and most of the pipelines are underground to protect from freezing. The Catskill Water Supply District has pumped emergency water from Catskill Creek in an extreme drought season. The booster pumping station in this alternative provides a standby pump and diesel generator in case of power failure.

Alternative 4A-2 - Extended Catskill Water Supply Pipeline from Sandy Plains Road

This alternative is similar to Alternative 4A-1, but has a shorter transfer pipeline diverting the water from the Potuck Water Plant to the potentially affected area. The extended force main requires two submerged creek crossing support trenches for both Catskill and Potic creeks. All of the technologies to install the creek crossing trenches have been proven under similar site conditions, and the availability of labor and material is generally good.

The O&M of this extended water tranfer and distribution system is not complex. The Catskill Water Supply District has sucessfully operated and maintained the same type of water works for more than 50 years. The probability of failure for a water distribution system is relatively low within its useful life.

4

Alternative 4A-3- Extended Catskill Water Supply Pipeline From Rudolph Weir Road

This alternative is similar to Alternative 4A-1, but has a longer transfer pipeline along Rudolph Weir Road. The pipe would be hung on the Route 67 bridge crossing Catskill Creek. This bridge hangling technology has been proven and demonstrated. Labor and materials for this technology are readily and commercially available. The pipe will be insulated, and requires a periodic and long-term maintenance which is technically simple.

The possible mode of water supply failure in a water transfer and distribution system is primarily from pipe leakage beyond the useful life of the pipe joints. The technologies of water pipe leakage prevention are available and proven.

Alternative 4C - New Well Field Water Supply System

This alternative consists of two new deep wells, an in-line chlorinator, a water storage tank and a water distribution system. Except for the deep wells, the reliability of other water supply facilities is generally high, since labor and materials are readily available and technologies are proven and demonstrated. O&M of the water transfer and distribution system are normally simple.

The long-term reliability of new deep wells with respect to yield and water quality is uncertain based on the following considerations:

- The area groundwater is found almost exclusively in bedrock fracture zones and joints, and typical yields are approximately 20 gpm;
- Within two miles upgradient of the AT site, only the flood plain area near Catskill Creek (Leeds Flat area) appears to be capable of providing a yield of more than 30 gpm. This is based upon favorable recharge characteristics and the assumption that groundwater is flowing towards the stream. Two trailer park wells are currently installed in this area; and
- The proposed new well field would be located between Catskill Creek and Route 23B in the Leeds Flat area. The long-term operation of the new well field would have two uncertainties: the potential for interference from of the trailer park wells, and the potential for contamination from the old municipal landfill which is located approximately one half mile upgradient of the proposed well field.

At this time, there is not enough information to resolve these two uncertainties related to the future operation of new wells.

Alternative 4D - Extended Trailer Park Well Water Supply System

The utilization of the trailer park wells to serve the potentially affected area is technically feasible based on the current operation performance. The availability of a sufficient yield and the maintenance of water quality of the trailer park well field are not issues of concern, since the wells are currently operating and can provide the required capacity at this time. However, the future capacity and the potential for contamination from the upgradient municipal landfill are unknown.

°Public Health Protection

Alternative 1-No Action

This alternative includes a long-term groundwater monitoring program and an operation and maintenance program for the existing point-of-use treatment devices, seven carbon filters and one airlift stripping system.

This alternative will provide limited protection of public health in the present eight affected residences only. These point-of-use treatment devices reduce the public health threat to less than a 10^{-6} risk level. However, to maintain the same level of effectiveness, regular replacement of the carbon filters and proper cleaning to prevent the growth of microbes is required for an airlift stripping system. Treatment system malfunctions and operational errors could cause exposure to accumulated contaminated residues on the equipment and facilities. The long-term monitoirng program would exert no effect on health concerns, but it would provide an early warning of any additional contaminated wells.

Alternative 1 would not include any implementation of treatment facilities and, therefore, no construction hazards are expected. However, the direct contact and inhalation risk of volatile contaminants might threaten workers during the operation and maintenance activities. Hence, a health and safety protection procedure would be required for workers.

Post-remedial reductions in public health risks would be moderate and not complete for Alternative 1. The continously migrating groundwater contaminants may cause additional well contamination, and additional installation of carbon filters would be required in the future.

In summary, this alternative provides only partial public health protection.

Alternative 3B - Water Delivery By Tanker Truck, Elevated Storage Tank, Water Lift Pump and Water Distribution System

This alternative consists of a water tanker truck, an elevated storage tank, water lift pumps and a water distribution system. The intent of this alternative is to provide a rural community with an alternate water source so that the potentially affected residences can discontinue the use of potentially contaminated groundwater.

Utilizing trucked in water, this alternative will eliminate the potential exposure of the public through ingestion and direct contact of contaminated groundwater from the currently unprotected wells, significantly reducing the associated public health risk.

This alternative would be implemented in the potentially affected area where the extent of contaminated soil is unknown, particularly where the elevated storage tank will be located at the AT site. Since the water distribution system would be installed in a shallow subsurface (4 to 5 ft), normal construction hazards such as dust, soil erosion and dewatering would be encountered. The regular occupational safety and health protection measures would be provided during the short-term construction.

Health considerations associated with the construction of an elevated water storage tank on-site could be significant, since there is a potential to come in direct contact with hazardous materials. Volatile emissions may be released and cause a possible deterioration of air quality, hence a short-term air monitoring program may be required.

After remedial action is completed, no further exposures would be expected before the contaminated groundwater is remediated. The probability of the alternate water distribution system being contaminated by groundwater is very low.

Alternative 4A-1 - Extended Catskill Water Supply Pipeline From Leeds

This alternative would provide an alternative water source by extending the Catskill water supply pipeline to the potentially affected area. The expanded water distribution system consists of a water diversion station, a booster pumping station, the creek crossing support trench and a water distribution system.

This remedial alternative is designed for a risk level below 10^{-6} and focuses on providing a totally alternate water source. The alternate water supply does not contain any hazardous substances. Termination of the contaminated groundwater uses would totally eliminate the existing exposure pathways of ingestion, inhalation and direct contact of the contaminated groundwater. The public health risk reduction of this alternative is high and complete.

Normal construction hazards such as dust, noise and temporary air quality deterioration due to traffic congestion are expected during the implementation of this public water works project. Basic public health and safety protection measures would be applied as a short-term requirement. Aside from normal construction hazards associated with the water transfer pipeline installation, the construction of the water distribution system in the potentialy affected area would have a low probability of direct worker contact with the contaminated soil and groundwater. There should be only minimal effects on neighboring communities during construction of this alternative if dust and traffic control measures are taken.

This alternative is similar to Alternative 3B in that the complete elimination of potential post-remediation public health risk would be achieved. Considering the extent and level of contaminants where the pipeline would be installed, the exposure of subsurface contaminanted soil and groundwater to the water supplies would be minimal.

Alternative 4A-2 - Extended Catskill Water Supply Pipeline From Sandy Plains Road

This alternative would have a water transfer system and water distribution system identical to Alternative 4A-1, except for different water transfer pipe routing. A shorter water transfer pipeline is not developed based on any public health risk concerns.

The minimization of exposures to the contaminants, safety concerns and post-remediation risk reduction would be equivalent to those detailed in Alternative 4A-1.

Alternative 4A-3 - Extended Catskill Water Supply Pipeline From Rudolph Weir Road

This alternative would have a water transfer system and water distribution system identical to Alternative 4A-1, except for different water transfer pipe routing. A longer water transfer pipeline is not developed based on any public health risk concerns.

The same exposure minimization to the volatile organic contaminants that was outlined in Alternative 4A-1 can be applied to this alternative.

The same safety concerns with implementing Alternative 4A-1 can be applied to this alternative. However, traffic congestion could have greater consequences on Route 67 and the surrounding residences because of the construction activities in hanging the water transfer pipe on the bridge.

The complete elimination of potential post-remediation public health risks would occur after implementation of this alternative.

Alternative 4C - New Well Field Water Supply System

This alternative involves the implementation of a new well field, a water storage tank and a water distribution system. This new system would provide an alternative water source by utilizing uncontaminated groundwater upgradient from the AT Site.

Technologies being considered for Alternative 4C would successfully mitigate the existing and future exposures of the receptor population to all contaminated on-site matrices. As long as the new well field is not contaminated, the reduction in public health risks contributed by this alternative is complete.

This alternative would have the normal hazards associated with construction activities as outlined in Alternative 3B, except the potential for workers to contact and inhale volatile organics during the construction of an elevated storage tank on-site. Alternative 4C would have the elevated storage tank installed on the new well field site where no volatile air emissions could expose the workers and the surrounding population.

Improperly constructed new wells can provide an effective conduit for contaminants to move from a contaminated aquifer to an uncontaminated aquifer. As discussed previously, the new well field would be located approximately one mile upgradient of the AT site and 1/2 mile downgradient of the municipal landfill. The precise location of the contaminant plumes from the AT site as well as the possibility of the presence of a plume from the landfill cannot be determined at this time.

In the future, this alternative might completely eliminate the potential post-remediation public health risks. However, if any contaminant migration reaches the new well field, this would create significant post-remediation risk.

Alternative 4 D - Extended Trailer Park Well Water Supply System

This alternative would utilize the existing trailer park wells as an alternative water source and create a new water supply district covering both the potentially affected area and the trailer park. This alternative consists of a water storage tank and a water distribution system similar to Alternative 4C, except that a portion of the force main would be extended to serve the trailer park.

The minimization of exposure to the contaminants would occur in the same manner as those detailed in Alternative 4C.

The same safety concerns with implementing alternative 4C can be applied to this alternative. However, since the wells are currently existing, the hazards posed by remediation is less than Alternative 4C.

Since the trailer park well field is located approximately 3/4 mile upgradient of the AT site and 1/2 of a mile downgradient of the municipal landfill, the post-remediation risk reduction of this alternative would be the same as Alternative 4C.

° Environmental Impacts

Alternative 1 - No Action

This alternative involves only groundwater monitoring and O&M of the existing treatment facilities. Essentially, no implementation would be required. Since the treated flow is small compared to the contaminated groundwater, there would be no change in the existing migration of groundwater contamination. The possibility that this action would appreciably affect groundwater quality is considered remote. Any beneficial effects on groundwater restoration would depend upon the long-term natural soil attenuation and groundwater flushing.

The intermittent pumping and treatment of eight residential wells would have essentially no effect on the existing environmental conditions of the surface water, groundwater and ecosystem. The groundwater pumping may slightly affect the migration pattern of groundwater contaminants, but the positive impact of removing contaminants and the negative impact of spreading contaminant would be balanced. Since this alternative requires no construction, there would be no improvement of human use resources, and the existing migration of contaminants off-site via groundwater would continue indefinitely. This alternative would not increase the extent and/or level of contamination in this study area.

Alternative 3B - Water Delivery By Tanker Truck, Elevated Storage Tank, Water Lift Pump and Water Distribution System

This alternative includes the implementation of an elevated storage tank at the AT site and a water distribution system in the potentially affected area. The construction activities may result in a slight beneficial impact on removal of contamination sources in the study area. During the excavation activities, soils would be monitored and those with high contaminant levels would either be removed for off-site disposal and replaced with clean soils or handled as part of the source control remedy. The possibility of disturbing and removing contamination sources is much higher for the elevated storage tank construction than for the installation of the water distribution system, since it would be installed on the AT property.

The implementation of Alternative 3B would temporarily increase the potential for contaminated surface water runoff, particulate (dust) dispersion, traffic congestion and high noise levels. Since the pipeline excavation, restoration and repavement would be completed in the same day, the amount of contaminated surface runoff would be minimized. Portions of the pipeline installation would require dewatering which would be monitored. Adequate treatment should be provided for contaminated groundwater prior to discharge. The potential of shallow groundwater contamination within the affected area cannot be determined at this time.

Dust suppression measures would be provided for the earthwork construction, particularly an air monitoring program during the excavation of a water tank foundation at the site. A runoff drainage barrier system such as a silt fence would be installed to offset the possibility of erosion at the site.

A traffic control plan would be developed and executed to minimize the potential increase of traffic congestion, air pollution and noise. Since the rural area does not have a heavy volume of traffic on Route 23B, the short-term traffic impacts on the human environmental are considered insignificant. The long-term traffic impacts due to the water deliveries at four round-trips per day are also considered minimal.

Alternative 4A-1 Extended Catskill Water Supply Pipeline From Leeds

This alternative includes the installation of a water transfer pipeline, a booster pumping station and water distribution system. Since these construction activities are not directly related to environmental improvement, no beneficial impact on the contamination source removal and groundwater restoration is expected. A long-term water supply would directly raise the living standards and improve the community's environment.

The same adverse environmental impacts in terms of traffic effects, dust dispersion and increased noise that was discussed in Alternative 3B during the water distribution system construction can be applied to this alternative. In addition, the water transfer pipeline would cross Catskill Creek and would require submerged pipe installation. Catskill Creek is classified as a B(T) stream which denotes that it has a water quality suitable for fishing, especially for trout. The construction of submerged trenches would require a short-term diversion of creek flow which would alter the existing flow pattern. Marine biota and species would not be adversely affected after construction is complete. The installation of pipe submerged trenches in the creek would not raise the water level, change flow patterns or increase the possibility of flooding.

Alternative 4A-2 - Extend Catskill Water Supply Pipeline From Sandy Plains Road

This alternative would implement a water transfer and distribution system utilizing an alternate water source similar to Alternative 4A-1, except by means of a different water transfer route. As discussed in Alternative 4A-1, the beneficial impacts on the human environment, ecosystem and human use resources for this alternative are insignificant. However, this alternative provides a public water supply and terminates the use of potentially contaminated groundwater, thereby creating an unquestionable long-term benefit for the community.

The same adverse environmental impact concerns with implementing Alternative 4A-1 can be applied to this alternative. However, a portion of this water transfer pipeline would be trenched subgrade through a strip of agricultural land before and after crossing the Catskill Creek. The loss of approximately one quarter acre of farm land is not considered a significant adverse impact.

Alternative 4A-3 - Extended Catskill Water Supply Pipeline From Rudolph Weir Road

This alternative is similar to Alternative 4A-1 and Alternative 4A-2, since the beneficial environmental impact of this alternative is considered minimal.

The same adverse environmental impact concerns related to implementing alternative 4A-1 can be applied generally to this alternative, except the adverse environmental impacts on Catskill Creek. This alternative would involve the hanging of the water transfer pipe on the Route 67 bridge instead of the creek crossing support trenches. During the temporary construction of pipe supports on the bridge, adverse environmental impacts would be limited to traffic-related effects. An increase in noise levels would accompany the construction activities, but once completed, the negative impacts would be completely eliminated.

Alternative 4C - New Well Field Water Supply System

This alternative would install a new well field in an uncontaminated aquifer and a water distribution system to serve the potentially affected area. Any beneficial effects to the biological environment and human environment are minimal. However, this alternative creates a new public water supply district which would improve the social-economic environment for the community.

Short-term adverse effects such as traffic, dust and noise during the installation of a water distribution are the same as described in Alternative 3B. However, adverse impact on the area ecosystem may occur as a result of this alternative.

A slight environmental risk would still remain after the implementation of the new well field, since the well pumping would create a radius of influence which may interfere with the migration of contaminants from both the AT site and any contaminants the could be migrating from the old municipal landfill. During long-term pumping, the groundwater flow pattern may be changed, and deleterious effects on other wells in the area may result from intercepting contaminated groundwater.

The chlorination of groundwater would not require intensive material handling and would not increase the risk of exposure or accident.

Alternative 4D - Extended Trailer Park Well Water Supply System

This alternative would divert the trailer park well water to a newly built water storage tank and then a water distribution system within the potentially affected area. The positive and negative environmental impacts described in Alternative 4C are similar for this alternative. However, this project would not include the installation of new wells. Accordingly, the groundwater pumping interference would be reduced and the associated environmental risk would be minimized. In general, this alternative has the same long-term benefit as Alternative 4C, but with less adverse side effects resulting from construction and operation.

Implementability

Each alternative is evaluated with respect to technical feasibility, constructability, institutional requirements, and safety.

The evaluation of technical feasibility consists of determining how technically practicable each water supply alternative would be to implement at this specific site under these particular conditions. Feasibility considers the availability of required equipment and facilities for an alternative in addition to the appropriateness of recommending that alternative.

Constructability relates to the ease of installation and the estimated time required to design and construct each water supply alternative. This evaluation reflects the estimated difficulty of construction due to the need for rock excavation, dewatering, crossing of steep terrain or bodies of water, and access to private property. Timeliness (time to implement) system) also considers how long it might take to secure all of the required state, county, and local construction approvals for each alternative.

The implementation of each water supply alternative will involve certain site-specific and technology-specific institutional requirements. These include administrative and permitting, requirements and compliance with all of the ARARs, including more stringent state requirements. State and public acceptance of the alternative is also considered.

The evaluation of safety includes the potential short-term occupational health impacts to workers during implementation of an alternative based on Occupational Safety and Health Administration and National Institute of Occupational Safety and Health guidelines for health and safety. In addition, consideration is given to safety and potential impacts to nearby residents.

- **Technical Feasibility**

The technical feasibility evaluation is based on whether the water supply alternative is technically practicable, available and appropriate for implementation at this site under these particular conditions.

Alternative 1 - No Action

This alternative includes long-term O&M for the eight existing point-of-use treatment systems along with a long-term monitoring program of the other twenty homes in the potentially affected area immediately surrounding the AT site. It is technically practicable to continue to use these treatment systems since they have functioned effectively to date and replacements are readily available. This alternative is not appropriate for this site, since it continues to pose a threat to the residents not currently utilizing (point of use) treatment systems.

Since there is no way to predict when the carbon filters will be exhausted ("break through"), it is possible that the residents could be exposed to contaminated water at their taps and not be aware of this until the laboratory analysis is received from the next round of sampling. Also, this alternative has no provisions for carbon treatment units in the other homes should the contamination continue to migrate beyond the current eight residences.

Alternative 3B - Water Delivery by Tanker Truck, Elevated Storage Tank, Water Lift Pump, and Water Distribution System

This alternative entails establishing a new independent water supply district consisting of an elevated storage tank, regular deliveries of purchased water by tanker truck, a lift pump and a complete distribution system. Since each required piece of equipment is both conventional and readily available, implementing this alternative is technically practicable.

Although this type of system has not been previously used, it would provide an appropriate solution for this small and rural community. A 5000-gallon tanker truck would have to pick up and deliver water to the 50,000-gallon water tower four times per day, seven days per week. Water could be purchased from the nearby Catskill Water District and each delivery would only entail a 20-mile round trip. The water tower could be installed on the AT site for easy access from Route 23B and to take advantage of the available static head from this local point of maximum elevation. An adequate supply of water would be provided.

Alternative 4A-1 - Extended Catskill Water Supply Pipeline from Leeds

This alternative consists of purchasing water from the nearest available municipal water supply system by extending the Catskill water supply pipeline from Leeds, across Catskill Creek, and along Route 23B. Since the Catskill Water District system has a capacity of 2.8 MGD and currently uses only 1.7 MGD during typical average demand periods, it is technically feasible to extend this system to supply the 80 residences (approximately 250 persons) in the potentially affected area.

The Catskill Water District is well-established and has been functioning successfully for over 50 years. Installing an extension would entail standard and readily available equipment such as a water diversion station and a booster pumping station. In addition, this type of project has been implemented at other similar sites. This alternative is appropriate for this site and would provide an adequate supply of water to meet a typical rural demand of 75 gpcd.

Alternative 4A-2 - Extend Catskill Water Supply Pipeline from Sandy Plains Road

This alternative is similar to alternative 4A-1, except that the tie-in to the existing Catskill pipeline would be at Sandy Plains Road, and the extension would have to cross both Potic and Catskill Creeks by submerged installations. Less piping is required than for either Alternative 4A-1 or 4A-3. Implementing this alternative is technically practicable, uses conventional and readily available equipment and facilities, and is appropriate for use at this site.

Alternative 4A-3 - Extend Catskill Water Supply Pipline from Rudolph Weir Road

This alternative is similar to Alternative 4A-1 and 4A-2, except that in this option the tie-in to the existing Catskill pipeline would be near Rudolph Weir Road, and the extension would have to cross both Potic and Catskill creeks. More piping is required than for either Alternative 4A-1 or 4A-2, but this route does not require crossing private land and uses the Route 67 bridge to hang the pipe over Catskill Creek.

Implementing this alternative is technically practicable, uses conventional and readily available equipment and facilities and is appropriate for use at this site.

Alternative 4C - New Well Field Water Supply System

This alternative establishes a new independent water supply district consisting of two new wells, a water storage tank, chlorine treatment and a complete distribution system. The proposed location of the new well field is approximately one mile southeast of the AT site, in an area labeled as the "Leeds Flat" on the USGS topographic map, between Catskill Creek and Route 23B. Deep wells installed in this area have yielded between 30-60 gpm. Sand and gravel deposits are capable of yielding the most water. Each well should be capable of providing at least 40 gpm based on the favorable recharge characteristics of this location, and the assumption that groundwater is flowing towards the creek.

Pumping the groundwater to a 50,000-gallon water storage tank provides a buffer against the continually fluctuating domestic demand. Based on recent results at a trailer park located less than 1,000 feet northwest of the proposed location, the groundwater pumped from this aquifer is expected to be suitable for potable use after chlorination. However, definitive proof to confirm the adequacy of this water supply with respect to quantity and quality can only be obtained when the wells are actually drilled and tested. Several wells might have to be drilled before meeting the requirements.

Implementing this alternative is technically practicable, uses conventional and readily available equipment and facilities, and appears to be appropriate for use at this site.

Alternative 4D- Extend Trailer Park Well Water Supply System

Alternative 4D is similar to Alternative 4C since it would use uncontaminated groundwater from a well field which is located approximately 3/4 mile upgradient of the AT site. The trailer park has two existing wells which could provide a combined flow of approximately 70 gpm. Since this flow is considerably more than the instantaneous demand at the trailer park, it would be technically feasible to pump the groundwater continuously to a 50,000-gallon water storage tank which would enable servicing the potentially affected area (80 homes, 250 persons) and would provide a buffer against continual fluctuations in the domestic demand.

Combining and extending the trailer park system is practicable, and uses conventional and readily available equipment and facilities. This alternative should be appropriate for use at this site, and it would benefit the residents of the trailer park.

The existing wells currently provide groundwater of adequate quantity and quality. This mitigates the uncertainty associated with installing a new well field (Alternative 4C).

° Constructibility and Timeliness

The constructibility evaluation is based on the ease of installation and the timeliness of implementing the water supply alternative at this site under these particular conditions.

Alternative 1 - No Action

Since this alternative only includes long-term O&M of the eight existing point-of-use treatment systems and monitoring of the other 20 homes immediately surrounding the AT site no construction is required

Alternative 3B - Water Deliver by Tanker Truck, Elevated Storage Tank, Water Lift Pump, and Water Distribution System

This alternative requires the construction of a 50,000 gallon elevated storage tank at the abandoned AT site to take advantage of its central location, available static head due to elevation, and paved access roads. The ease of installation of this 80-foot high water tower constructed of steel and supported with a multi-column structure should be relatively straightforward since this site has had previous construction work. Burial of 11,000 feet of transmission and 7,500 feet of branch piping along Route 23B and its side streets will entail moderate difficulty due to the need for rock excavation over approximately one quarter of the total excavation length. The pipe will be buried at least five feet to protect against freezing.

The time required to implement would be approximately nine months, including construction approvals from the Greene County Highway Department and the Town of Cairo, and possible precautionary procedures while excavating contaminated soil at the AT site.

Alternative 4A-1 - Extended Catskill Water Supply Pipeline from Leeds

This alternative entails construction of a water diversion station in Leeds, extension of the pipeline across Catskill Creek by means of a 400 ft submerged installation, construction of a booster pumping station and installation of 18,000 ft of transmission and 7,500 ft of branch piping along Route 23B and its side streets. Crossing Catskill Creek near the historic bridge in Leeds will require submerged installation of the pipe in a 3 ft wide by 5 ft deep trench.

Road excavation along the proposed route will require roughly 45 percent rock excavation and 35 percent dewatering. The majority of the piping will be along a straight and relatively flat segment of Route 23B. The excavation requirements within the proposed service area (branch piping) are the same for each water supply alternative.

The time required to implement would be approximately one year, including construction approvals from the Greene County Highway Department and the Town of Cairo.

Alternative 4A-2 - Extended Catskill Water Supply Pipeline from Sandy Plains Road

Alternative 4A-2 is similar to Alternative 4A-1 except that it connects to the existing Catskill pipeline at Sandy Plains Road in Athens and crosses both Potic and Catskill Creeks along with various private properties, resulting less (13,000 ft) transmission pipeline than either Alternative 4A-1 or 4A-3. Crossing Potic Creek will require a pipe support trench (3 ft wide x 5 ft deep) approximately 60 feet long, while crossing Catskill Creek will require a similar structure roughly 200 feet long.

Only 20 percent of the total excavation will be rock excavation in this case, although roughly 50 percent will require dewatering due to the prevalence of low-lying floodplain areas. Some of the terrain will be rolling but the installation of both the water diversion and booster pumping stations should not pose unusual difficulties.

The time required to implement this alternative is estimated at 15 months, which is longer than for Alternative 4A-1 due to the need to cross two creeks and privately-owned land. Access agreements often take two to six months to negotiate. This land consists of mostly plowed fields used for agricultural purposes.

Alternative 4A-3 - Extended Catskill Water Supply Pipeline from Rudolph Weir Road

Alternative 4A-3 is similar to Alternatives 4A-1 and 4A-2 except that in this option the tie-in to the existing pipeline would be near Rudolph Weir Road in Cairo. The pipeline extension would then cross Potic Creek by means of a pipe support trench approximately 60 feet long. The Route 67 steel truss bridge would be used to hang the pipe across Catskill Creek, which is roughly 200 feet wide at that point. This bridge has a weight limit on vehicles crossing over it of 28 tons and should, therefore, have no problem supporting the proposed pipeline.

Approximately 10 percent of the total proposed excavation will be rock excavation and roughly 60 percent will require dewatering. As in Alternative 4A-2, some of the terrain will be rolling, but the installation of both the water diversion and booster pumping station are not expected to pose unusual difficulties.

Although this alternative requires the longest length of piping (23,000 feet of transmission pipe), it takes advantage of an available bridge crossing and does not require access to privately-owned land as in Alternative 4A-2. The time required to implement this alternative is expected to be approximately ten months, which is shorter than for either Alternative 4A-1 or 4A-2.

Alternative 4C - New Well Field Water Supply System

Alternative 4C requires the installation of a new well field consisting of two new deep wells, each six inches in diameter, approximately 400 feet deep, and with a combined capacity of at least 60 gpm. The proposed location of this new well field is roughly one mile southeast of the AT site off Route 23B and within 1,000 feet of two recently installed wells at two existing trailer parks. This location has been picked because this area is expected to yield the most groundwater, and the quality of water from the new trailer park wells is reported to be satisfactory. However, the exact location and number of wells can not be determined until a detailed groundwater study is completed.

Construction of a 50,000 gallon, reinforced concrete, water storage tank could require special foundation work depending on the soil composition, and an agreement would have to be negotiated with the private land owner regarding the location of this tower on his property.

Burial of the 13,000 ft of transmission pipeline would require approximately 30 percent rock excavation and 30 percent dewatering. The time required to implement this alternative is estimated to be approximately seven months.

Alternative 4D - Extended Trailer Park Well Water Supply System

Alternative 4D is similar to Alternative 4C in relation to constructability except that it requires extending an existing trailer park well field instead of developing a new well field. The major requirement in this case is to construct a 50,000 gallon, reinforced concrete, water storage tank to enable using the maximum combined capacity of the two existing wells (roughly 70 gpm). An agreement would have to be negotiated with the trailer park owner regarding the location of this tower on his property. Special foundation work might be required due to the soil composition.

Burial of the 12,000 ft of transmission pipeline will require roughly 30 percent rock excavation and 30 percent dewatering. The time required for implementation is estimated to be approximately six months.

- Institutional Requirements

The institutional requirements evaluation is based on whether the water supply alternatives can: 1) meet the administrative and permitting requirements; 2) attain ARARs for this operable unit; and 3) be acceptable to the public and state.

Alternative 1 - No Action

This alternative only inlcudes long-term O&M of the eight existing point-of-use treatment systems and monitoring of the other 20 homes immediately surrounding the site. No permits have to be acquired for this activity. This alternative will not attain all of the ARARs because breakthrough could occur and not be detected until the next round of sampling. The public and State are not likely to accept this alternative as a long-term protective measure.

Alternative 3B - Water Delivery by Tanker Truck, Elevated Storage Tank, Water Lift Pump, and Water Distribution System

This alternative will require the establishment of a new independent water supply district which will own and be responsible for the O&M of the entire water supply system.

A NYSDEC "Application for Permit" and its supplement, "Application for Public Water Supply Permit," would have to be filed for this project. Any such project must also be reviewed by NYSDEC with respect to its potential environmental impact under New York State's Environmental Quality Review Act (SEQR). A "negative declaration" would have to be filed by the lead agency stating that in its judgment, this alternative would not produce an adverse impact.

In addition to obtaining the NYSDEC permit, NYSDOH would have to approve the proposed water supply system in terms of compliance with water quality standards and would have to review the engineering plans and specifications for the distribution system. The design should be consistent with "Recommended Standards for Water Works - 1982" (Water Work Standards, 1982) and "The Design of Small Water Systems" (NYSDOH, 1985).

Construction approval will be required from the Greene County Highway Department to enable burial of distribution pipe along County Route 23B. An "Application for Permit to Do Work On and Within a County Road Area" must be filed along with additional information such as a description of the project and proposed activities, and a plan for handling traffic disturbances or other special conditions. The Highway Engineer would also meet with the contractor to discuss the proposed work. A similar approval would be required from the Town of Cairo for all work performed on town roads off Route 23B.

This alternative is expected to meet the ARARs since it will utilize purchased potable water from the nearby Catskill Water District.

The public and State are likely to accept this alternative since it provides a clean water supply with adequate quality and quantity.

Alternative 4A-1 - Extended Catskill Water Supply Pipeline from Leeds

This alternative is different from Alternative 3B since it extends the existing Catskill Water Supply District pipeline from Leeds to the potentially affected area. The same NYSDOH and NYSDEC permit applications would be required as with respect to alternative 3B, however.

Construction approvals would have to be obtained from the Greene County Highway Department, the Town of Catskill and the Town of Cairo. Permission would be required from the Village of Catskill to enable connection to the existing pipeline by the construction of a water diversion station. Construction activities related to submerged installation of the pipe across Catskill Creek would require an application for a NYSDEC Stream Disturbance Permit. Permission might have to be obtained from either the National and/or the New York State Historical Society to enable construction of this structure near the historic bridge in Leeds. No private land would have to be acquired.

This alternative is expected to meet the ARARs since it extends a currently approved potable water supply system. The public and State are likely to accept its implementation.

Alternative 4A-2 Extended Catskill Water Supply Pipeline form Sandy Plains Road

This alternative is almost identical to Alternative 4A-1 with respect to institutional requirements. The only major difference is that Catskill Creek would be crossed by submerged installation at a different location and an additional NYSDEC Stream Disturbance Permit would be required for crossing Potic Creek near Sandy Plains Road. Construction approval would have to be obtained from the Town of Athens to enable work on Sandy Plains Road. Privately-owned agricultural land might have to be obtained in order to enable burial of the pipeline.

This alternative should also meet the ARARs and the public and State are likely to accept its implementation.

Alternative 4A-3 - Extended Catskill Water Supply Pipeline from Rudolph Weir Road

This alternative is almost identical to Alternatives 4A-1 and 4A-2 with respect to institutional requirements. The only major difference is that Catskill Creek would be crossed by hanging the pipe on the Route 67 bridge in South Cairo. Use of this bridge would require approval of the Greene County Highway Department. No privately-owned land would be crossed in this alternative.

This alternative should also meet the ARARs; and the public and State are likely to accept its implementation.

Alternative 4C - New Well Field Water Supply System

This alternative also requires the establishment of a new independent water supply district. All of the same requirements would have to be satisfied including obtaining the NYSDEC permit, complying with SEQR requirements, obtaining NYSDOH approval, a Greene County Highway Department permit, and Town of Cairo approval.

Private land would also have to be acquired in order to establish the new well field and install the storage tank.

It is unknown whether this alternative will meet ARARs, since the radius of influence of the well pumping might draw contaminants from the AT site, or from the municipal landfill (if that landfill is a source of groundwater contamination). The public and state are not likely to accept this alternative.

Alternative 4D - Extended Trailer Park Well Water Supply System

This alternative is almost identical to Alternative 4C with respect to institutional requirements. The only major difference is that an agreement would have to be negotiated with the trailer park owner as to the connection to and extension of the existing well water supply system.

- **Safety**

The safety evaluation is based on whether the water supply alternative might cause potential short-term health impacts to workers and the public during excavation, construction and other implementation activities.

Alternative 1 - No Action

Since this alternative only includes long-term O&M of the eight existing point-of-use treatment systems and monitoring of the other twenty homes immediately surrounding the AT site, the only implementation activities would be replacing exhausted carbon filter cells with new ones and replacing parts on the airlift stripping system. Since these are closed systems and no excavation or construction would be required, these activities should pose no potential short-term health impacts to the workers and the public.

Alternative 3B - Water Delivery by Tanker Truck, Elevated Storage Tank, Water Lift Pump, and Water Distribution System

This alternative requires construction of a 50,000 gallon elevated storage tank at the abandoned AT site to take advantage of its central location, available static head due to elevation, and paved access roads. Since the extent of on-site soil contamination has not yet been completely characterized, but dumping of hazardous waste onto site soils has been reported, it is assumed that any excavation work conducted on the property might result in potential short-term health impacts to workers.

This potential risk can be mitigated by following the health and safety plan which would be developed for the construction of this remedy.

Installation of the transmission and branch piping along Route 23B and its side streets, common to each of the remaining water supply alternatives, is not expected to result in any short-term health impacts to workers. No other complex or dangerous work is involved in the implementation of this alternative.

Alternative 4A-1 - Extended Catskill Water Supply Pipeline from Leeds

The major construction activity in this alternative is the submerged installation of the pipeline including the pipe support trench required for crossing Catskill Creek at a point where it is roughly 400 ft wide. Installation of the transmission and branch piping alone Route 23B and its side streets, which is required by each of the water supply alternatives, is not expected to result in any short-term health impacts to the workers. Burial of the pipe along the boundaries of the American Thermostat property may require the workers to wear PPE for that portion of the project.

Construction of the pipe support trench under Catskill Creek might involve some complex and potentially dangerous work, but only from the standpoint of working in and around a body of water, not in relation to exposure to hazardous waste.

Alternative 4A-2 - Extended Catskill Water Supply Pipeline from Sandy Plains Road

Alternative 4A-2 is similar to Alternative 4A-1 with respect to worker safety considerations during implementation activities. The major construction activity in this case is the installation of the pipeline, including two submerged trenches to cross both Potic and Catskill creeks.

No short-term health impacts to the workers are expected during burial of the pipeline, except maybe during the portion of the project which entails work along the boundaries of the American Thermostat site. Adherence to site-specific health and safety protocols should minimize this concern.

Alternative 4A-3 - Extended Catskill Water Supply Pipeline from Rudolph Weir Road

Alternative 4A-3 has the same safety concerns as Alternatives 4A-1 and 4A-2, in addition to concerns associated with suspending a pipeline from the bridge.

Alternative 4C - New Well Field Water Supply System

The major construction activity in this alternative entails drilling two new wells and installing a water storage tank and complete distribution system. Unlike Alternatives 4A-1, 4A-2, and 4A-3, no complex or potentially dangerous work involving crossing water bodies will be required. The only potential short-term exposure to the workers might occur during excavation for pipe-laying alone the boundaries of the AT site. The remainder of the construction work should pose no safety problems.

TABLE 6

AMERICAN THERMOSTAT
COMPARISON OF ALTERNATIVE WATER SUPPLY ALTERNATES

		Capital Cost[1]	O&M Cost	Present Worth Cost	Time to Implement	Comment
Remedial Alternative						
Alt. 1	No Action	0	0.18	1.70	N/A	Does not protect human health by providing potable water to the community.
Point of Use Water Supply						
Alt. 3B	Water Delivery by Tanker Truck, Elevated Storage Tank, Water Lift Pump and Water Distribution System	2.32	0.20	4.38	1 yr.	Would require 4 tanker truck deliveries per day. Subject to service interuption (e.g. truck breakdowns).
Alternate Water Sources						
Alt. 4A-1	Extended Catskill Water Supply Pipeline from Leeds	3.17	0.12	4.23	1 yr.	Would provide adequate potable water from existing water district. Crosses Catskill Creek near historic bridge in Leeds.
Alt. 4A-2	Extended Catskill Water Supply Pipeline from Sandy Plains Road	2.27	0.10	3.21	1-2yrs.	Would provide adequate potable water from existing water district. Would require easements or acquisition of private land for pipe routing.
Alt. 4A-3	Extended Catskill Water Supply Pipeline from Rudolph Weir Road	2.38	0.11	3.47	1 yr.	Would provide adequate potable water from existing water district. Crossing of Catskill Creek by suspending pipe from Route 67 bridge.
Alt. 4C	New Well Field Water Supply System	2.20	0.13	3.38	1 yr.	Would require creation of new water district. Well field location could be subject to leachate contamination from nearby landfill.
Alt. 4D	Extended Trailer Park Well Water Supply System	2.06	0.12	3.22	1/2 yr.	Same as 4C.

Notes

1. All costs are in $ million

Alternative 4D - Extended Trailer Park Well Water Supply System

Alternative 4D is similar to Alternative 4C except that it requires extending an existing trailer park well field instead of developing a new well field.

Cost

The cost evaluation of each alternative is based on the capital cost (cost to construct), O&M cost (O&M), and present worth cost.

Present worth analysis is used to allow the costs of the various alternative to be compared on the basis of a single total cost figure representing the amount of money, that, if invested in the base year and expended as needed, would be sufficient to cover all the costs associated with the remedial action over its planned life.

The capital, O&M, and present worth costs for each alternative are presented in Table 6.

SELECTED REMEDY

The objective of this operable unit is to eliminate the threat posed to area residents by exposure to contaminated groundwater, and represents the first operable unit of a permanent remedy for the AT site. Identification of the nature, extent and sources of the contamination at and around the site, and the possible remediation of the groundwater contamination will be addressed in a subsequent ROD.

Based upon CERCLA as well as upon the review and evaluation of the water supply alternatives, the viable alternatives were narrowed down to two:

Alternative 4A-2 consists of extending the existing Catskill Water District pipeline from Sandy Plains Road along Route 23B to supply all of the potentially affected residences. This option would require crossing both Potic Creek and Catskill Creek along with crossing privately owned properties.

Alternative 4A-3 consists of extending the existing Catskill Water District pipeline from Rudolph Weir Road along Routes 67 and 23B to supply all of the potentially affected residences. This option would require crossing Potic Creek near an existing wooden bridge, and Catskill Creek by hanging the pipeline from the Route 67 bridge in South Cairo.

EPA has rejected the various other alternatives that were considered during the detailed evaluation phase of the FFS. Alternative 1 was rejected because it would allow the existing situation to continue, and therefore, would not protect human health. Alternative 3B is not considered reliable on a long-term basis. O&M problems are potentially high (e.g., road closures due to inclement weather, tank truck breakdowns, etc.) Alternative 4A-1 was rejected because of its relatively high cost, compared with the expected costs of Alternatives 4A-2 and 4A-3 and because of the potential impacts of construction near the Leeds Bridge (a historical site) and the additional rock excavation during construction. Alternative 4C was rejected due to the uncertainties related to developing a new well field in this area. While the area selected might provide wells with a yield of 60 gpm, only a detailed and lengthy hydrologic groundwater study would determine if this was indeed a fact. In addition, the proximity of an existing landfill nearby could create a new potable water quality problem in the future. Alternative 4D has similar problems associated with it. If the existing wells were pumped at their maximum capacity, water quality problems could arise due to leachate from the nearby landfill. For this reason, Alternative 4D was also rejected.

The extension of the Catskill water supply system (in particular, Alternatives 4A-2 and 4A-3) best meets all evaluation criteria as previously described. Specifically, this remedy will best meet the objectives of CERCLA in that it is protective of human health, is implementable and cost effective, will provide a permanent solution to the problem of potential exposure of area residents to groundwater contaminants, and attains the ARARs and criteria relevant to this operable unit.

Although Alternative 4A-2 requires less pipeline and is less costly than Alternative 4A-3, it would require easements or acquisition of private land for the waterline routing. Because of the concerns that significant delays in acquiring the necessary easements might impact our ability to implement Alternative 4A-2 in a timely manner, Alternative 4A-3 was presented to the public as the preferred remedial alternative. However, as a result of local concerns regarding possible vandalism associated with suspending the pipeline from the Route 67 bridge as called for in Alternative 4A-3, and an increase in O&M costs that would result from the booster pump and a longer pipeline, EPA has decided that further evaluation of the advantages and disadvantages of Alternatives 4A-2 and 4A-3 should be conducted during the design phase. After performing this evaluation, which will include consultation with state and local agencies, EPA will make a final decision regarding the exact route of the pipeline.

Implementation of this remedy will effectively remove the risk of exposure to contaminated groundwater. Further, implementation of the selected alternative is consistent with all ARARs, including the Maximum Contaminant Levels established pursuant to the Safe Drinking Water Act.

Extension of the waterline (Alternative 4A-2 or 4A-3) represents the most cost-effective of all remedies considered. The estimated present worth cost of extending the waterline ranges from $3.21-3.47 million.

Selection of the waterline extension does not satisfy the statutory preference for remedial actions including treatment (which permanently and significantly reduces the volume, toxicity or mobility of hazardous substances) as a principal element, the reason being that such treatment options were not found to be practicable or appropriate for this operable unit. Such options, however, will be considered during the next operable unit.

Among the alternatives considered during the FFS was one which would have involved the provision of an alternate water supply through the use of a centralized well water treatment system. However, this alternative (Alternative 2B) would not provide a reliable permanent and long-term remedy for the water supply problem. Due to the continuous migration of groundwater contaminants in an unpredictable way in the bedrock fractures and joints, the O&M that would be required for Alternative 2B to produce safe drinking water in compliance with the ARARs would be very difficult. Construction of this alternative would entail high difficulty in relation to burial of two sets of pipe (one for clean and one for contaminated water), installation of a centralized treatment facility, and replacement of any existing well pumps which may be inadequate for these purposes.

Consistency with Other Environmental Laws

EPA conducted a preliminary evaluation of the project area for its potential for discovery of cultural resources. The evaluation indicates that known prehistoric occupations have been identified on both the terraces and low-lying areas to the north and south of the project area. In addition, Route 23B (i.e., the Mohican Trail), which is listed on the National Register of Historic Places, and Leeds bridge, which is an Historic Landmark, are in the project area and may be impacted by the proposed operable unit alternatives. Accordingly, it has been determined that the project area is highly sensitive for the discovery of cultural resources. Therefore, a survey will be conducted during the design phase to determine the presence or absence of unidentified cultural resources, as well as to provide proper documentation of known resources that could potentially be impacted by the proposed operable unit. Further, if the survey determines that significant resources will be impacted by the project, appropriate mitigation measures will be developed and implemented during the remedial design phase of the project.

The selected-alternative will be located within a 500 year floodplain. Although the major portion of the project (i.e., the water main) will not result in long-term impacts to the floodplain or flooding levels, construction of the diversion chamber associated with the project may have long-term impacts on flooding levels depending on its location. Although it is not believed that the impacts will be significant, a floodplain assessment will be prepared for the diversion chamber during the remedial design phase of the project. This will include development of appropriate control measures to protect the diversion chamber from flooding effects.

Community Acceptance

The residents were notified of the preferred remedy with the issuance of the PRAP, released on December 3, 1987, and at the public meeting held on December 8, 1987. The reaction at the public meeting was, in general, one of support for the proposed remedy. The main area of questions concerned the possibility of adding fire protection and/or expanding the service area. In addition, the Village of Catskill raised the question regarding the ability of its water system to handle the additional capacity associated with adding 80 residences to the system. According to EPA's contractor, the water supply system appears to be capable of providing enough additional capacity for both the proposed service area surrounding the AT site and for limited growth in the present water district. It is EPA's intention to work cooperatively with the Village to resolve the capacity issue during the design phase. However, if disagreement between EPA and the Village still persists, EPA will seek an independent assessment to evaluate the Village's capacity to handle the additional load.

In order to comply with the request for fire protection, if the local entities agree to pay for the incremental cost associated with full fire protection, EPA is prepared to provide an alternate water supply and distribution system with partial fire protection capabilities, including hydrants, valves, pumps, and the means for providing adequate pressure. EPA would not, however, provide equipment specifically related to the provision of extra water capacity, such as a larger diameter pipeline or larger capacity water storage tank. These additional costs for full fire protection would have to be covered by the State or locality. The cost involved in providing partial fire protection and full fire protection are compared to the base costs, and are shown in Table 7.

With regard to an expanded service area, EPA can only provide water to correct the problems within an existing system. If the local communities wish to expand the service area, they would be required to pay the incremental cost increase.

TABLE 7

AMERICAN THERMOSTAT

COMPARISON OF ALTERNATIVE WATER SUPPLY ALTERNATIVES WITH FIRE PROTECTION

Remedial Alternative	Capital Cost[1]			O&M Cost			Present Worth Cost			Time to Implement From ROD Signing
	Without FP[2]	With Partial FP	With FP	Without FP	With Partial FP	With FP	Without FP	With Partial	With FP	
Alt. 1 No Action	0	0	0	0.18	0.18	0.18	1.70	1.70	1.70	N/A
Point of Use Water Supply										
Alt. 3B Water Delivery by Tanker Truck, Elevated Storage Tank, Water Lift Pump and Water Distribution System	2.50	2.37	3.34	0.20	0.20	0.21	4.38	4.27	5.32	1 yr.
Alternate Water Sources										
Alt. 4A-1 Extended Catskill Water Supply Pipeline from Leeds	3.17	3.31	3.91	0.12	0.12	0.14	4.23	4.45	5.24	1 yr.
Alt. 4A-2 Extended Catskill Water Supply Pipeline from Sandy Plains Road	2.27	2.46	2.93	0.10	0.11	0.12	3.21	3.48	4.09	1-2yrs.
Alt. 4A-3 Extended Catskill Water Supply Pipeline from Rudolph Weir Road	2.38	2.61	3.36	0.11	0.13	0.15	3.47	3.78	4.79	1 yr.
Alt. 4C New Well Field Water Supply System	2.20	2.40	3.47	0.13	0.13	0.15	3.38	3.67	4.89	1 yr.
Alt. 4D Extended Trailer Park Well Water Supply System	2.06	2.25	3.29	0.12	0.13	0.15	3.22	3.49	4.68	1/2 yr.

Notes

SCHEDULE *

AMERICAN THERMOSTAT REMEDIAL ACTION

Activity	Date
° Regional Administrator Signs Record of Decision	January 1988
° Complete 60 Day Enforcement Moratorium**	February 1988
If no PRP pick-up, then:	
° Contractor Procurement and Remedial Design	February-September 1988
° Contractor Procurement Process for Construction	September to November 1988
° Initiation of Implementation of Remedy	November 1988
° Construction Complete	November 1989

* This is a projected schedule for this site and it is therefore subject to future modification.

** If a "good faith" offer is made by the PRPs within the 60 days, the enforcement moratorium would be extended an additional 60 days.

ADMINISTRATIVE RECORD INDEX

(to be provided)

ATTACHMENT A

New York State Department of Environmental Conservation
50 Wolf Road, Albany, New York 12233

Thomas C. Jorling
Commissioner

TELEX

DEC 31 1987

Mr. Stephen D. Luftig
Director
Office of Emergency and Remedial Response
U.S. Environmental Protection Agency
Region II
26 Federal Plaza
New York, NY 10278

Dear Mr. Luftig:

Re: American Thermostat Site
Operable Unit 1
Site I.D. No. 420006

The U.S. Environmental Protection Agency (USEPA) has recently completed a draft Focused Feasibility Study (FFS) of water supply alternatives at the American Thermostat Site located in South Cairo, New York. Based on this draft and the Record of Decision (ROD) briefing with the USEPA Regional Administrator on December 29, 1987, the USEPA recommends that the existing Catskill Water District pipeline be extended to supply all of the affected and potentially affected residences with potable water. The exact pipeline route (either alternative 4A-2 or 4A-3) will be determined during the remedial design phase.

The New York State Department of Environmental Conservation (NYSDEC) agrees with the USEPA recommendation.

We understand that the remedial capital costs for this operable unit will be divided 90% federal and 10% State of New York and that the first year operation and maintenance costs will be eligible for federal funding. The State of New York will be responsible for assuring the operation and maintenance after the first year of operation.

If you have any questions, please contact Mr. Robert Foltin or Mr. Joseph Iannotti, of my staff, at (518) 457-1708.

Sincerely,

Michael J. O'Toole, Jr., P.E.
Acting Director
Division of Hazardous Waste Remediation

cc: G. Pavlou, USEPA, Region II
J. Singerman, USEPA, Region II

ATTACHMENT B

RESPONSIVENESS SUMMARY

ATTACHMENT C

EPA WORK ASSIGNMENT NO. 157-2L77
EPA CONTRACT NO. 68-01-7250

EBASCO SERVICES, INC.

RESPONSIVENESS SUMMARY FOR THE AMERICAN THERMOSTAT SITE SOUTH CAIRO, NEW YORK

JANUARY 1988

NOTICE

The information in this document has been funded by the United States Environmental Protection Agency (U.S. EPA) under REM III Contract No. 68-01-7250 to Ebasco Services, Inc.

AMERICAN THERMOSTAT SITE
SOUTH CAIRO, NEW YORK
RESPONSIVENESS SUMMARY

The U.S. Environmental Protection Agency Region II (EPA) released to the public on December 3, 1987 a Focused Feasibility Study (FS) and Proposed Remedial Action Plan (PRAP) on the American Thermostat site for public review and comment from December 3, 1987 until December 24, 1987. As part of the public comment period, EPA held a public meeting on December 8, 1987 at the Greene County Court House in Catskill, New York to describe the remedial alternatives and to present EPA's preferred alternative for the development of an alternate water supply at the American Thermostat site. The implementation of an alternate water supply at the American Thermostat site is considered the first step (or first "operable unit") for remedial action at the site. A full-scale Remedial Investigation and Feasibility Study (RI/FS) of the American Thermostat site and the area groundwater will be conducted by EPA at a later date.

The purpose of this responsiveness summary is to provide EPA and the public with a summary of citizen comments and concerns about the site, and EPA's response to those concerns. A summary of comments received during the public comment period is provided in Section III. All comments and concerns summarized in this document have been factored into EPA's final decision regarding the selection of an alternative to provide an alternate water supply to areas affected and potentially affected by contamination from the American Thermostat site.

This community relations responsiveness summary for the American Thermostat site is divided into the following sections:

I. Responsiveness Summary Overview. This section briefly outlines the proposed remedial alternatives that were evaluated as part of the Focused FS, including EPA's selected alternative.

II. Background on Community Involvement and Concerns. This section provides a brief history of community interest in the American Thermostat site and a chronology of community relations activities conducted by EPA during remedial response activities conducted to date.

III. Summary of Major Questions and Comments Received During the Public Comment Period and EPA Responses to Comments. This section summarizes major questions and comments made verbally and in writing to EPA during the December 8th public meeting and public comment period (December 3 - December 24) and provides EPA responses to these comments.

IV. Remaining Concerns. This section discusses community concerns about the American Thermostat site that were not directly addressed during the Focused FS and that EPA should consider during the next phase of remedial activities, specifically the RI/FS for the second operable unit at the American Thermostat site.

I. RESPONSIVENESS SUMMARY OVERVIEW

The American Thermostat site is located in the Catskill Creek Valley in South Cairo, Greene County, New York. American Thermostat Corporation operated from 1954 to May 1985 assembling thermostats for small appliances. Tests of several residential and commercial wells in the vicinity of the American Thermostat plant indicated the presence of trichloroethylene (TCE) and tetrachloroethylene (PCE) in five residential wells. In May 1981 the State issued an advisory to affected residents advising them not to drink or cook with their well water. In 1983, under a consent order from the State, American Thermostat Corporation installed and periodically monitored carbon filters on contaminated residential wells, provided bottled drinking water to one resident whose well water was unfilterable, and conducted regular sampling and analysis. The activities were halted in May 1985, when the American Thermostat Corporation ceased operations at the site.

In August 1985, in response to a request for support from the New York State Department of Environmental Conservation (NYSDEC), EPA began a removal action to maintain the installed carbon filters, sample other domestic potable wells near the site, and provide additional affected homes with carbon filters and bottled water if needed. In September 1986, EPA authorized the installation of an airlift stripping system for the residential well closest to the site and the most seriously contaminated. Another contaminated residential well was discovered in February 1987 and EPA authorized the installation of a carbon filter.

In November 1987, EPA completed a Focused FS to identify an alternate water supply for affected and potentially affected residents. The Focused FS initially identified thirteen potential remedial alternatives. EPA identified seven of the most feasible for supplying an alternate water supply to affected and potentially affected residents. These alternatives are briefly summarized below.

Alternative 1: No Action

The no action alternative would involve the maintenance of the existing granular-activated carbon filters and airlift stripping system and the continued monitoring of twenty-eight residential wells within the vicinity of the American Thermostat site.

Alternative 3B: Water Delivery by Tanker Truck, Elevated Storage Tank, Water Lift Pump, and Water Distribution System

Alternative 3B would involve the construction of an elevated storage tank, a water lift pump, and a water distribution system. EPA would deliver water four times per day by tanker truck to the storage tank.

Alternatives 4A-1, 4A-2, and 4A-3: Extending the Existing Catskill Water District Pipeline

Alternatives 4A-1, 4A-2, and 4A-3 all would involve purchasing water from the nearest municipal water supply system and extending the Catskill water supply pipeline to the affected and potentially affected residences. Each alternative, however, proposes to extend the existing pipeline from different locations. Alternative 4A-1 would involve extending the Catskill water supply pipeline from the Town of Leeds and run it across Catskill Creek and along Route 23B. Alternative 4A-2 would involve extending the Catskill water supply pipeline from Sandy Plains Road then across both the Potic and Catskill Creeks and along Route 23B. Alternative 4A-3 would involve extending the pipeline from a point near Rudolph Weir Road, across both Potic and Catskill Creeks, and along Routes 67 and 23B.

Alternative 4C: New Well Field Water Supply System

Under Alternative 4C, EPA would establish a new, independent water supply district consisting of two new wells, a water storage tank, chlorine treatment, and a booster pumping station. In addition, EPA would extend a pipeline along Route 23B to serve the affected and potentially affected homes. This alternative would require EPA to select a suitable location for drilling new wells outside the potential area of contamination.

Alternative 4D: Extend Trailer Park Well Water Supply System

Alternative 4D would involve extending the well water supply system of an existing trailer park, located approximately three-quarters of a mile upgradient of the site.

All of the alternatives discussed above, except for the no-action alternative, would provide adequate potable water to the affected and potentially affected residents.

SELECTED ALTERNATIVE

After careful evaluation of the remedial alternatives, EPA has selected the extension of the Catskill water supply pipeline to the affected and potentially affected residents. The specific pipeline route to be implemented will either be alternative 4A-2 or 4A-3, described above. The final decision will be made during the design phase.

The selected remedial alternative is documented in the Record of Decision (ROD). A remedial investigation and feasibility study will be conducted at a later date to determine the full extent of contamination from the site and to develop alternatives to clean up the site and restore the groundwater.

II. BACKGROUND ON COMMUNITY INVOLVEMENT AND CONCERNS

The residents that have shown the most interest and concern about the site are mostly those residents with contaminated wells. In early 1986, EPA researched the community concerns and developed a Community Relations Plan to address those concerns. The concerns identified in 1986 and EPA actions to address those concerns are described briefly below.

- Effectiveness of carbon filtered water. Residents who have had carbon filters installed in their homes question the effectiveness of the filters in cleaning the water. As a result, residents have been using bottled water for cooking and drinking. In response to this concern, EPA made sampling results available to the residents and assured residents through a meeting that the carbon filter system does provide potable water meeting safe drinking water standards.

- Irregular schedule for carbon filter monitoring and maintenance. The residents with carbon filters have expressed concern with what they perceived as an irregular schedule for monitoring their filters and requested that EPA or the New York State Department of Health (NYSDOH) provide regular and easily understandable monitoring reports concerning the status of their filters. In response to this concern, EPA has taken quarterly samples and has provided the monitoring reports. In addition, when EPA officials visited residences to take samples they answered residents' questions.

- Schedule for providing bottled water. In January 1986, the residents using bottled water expressed concern about depleting their bottled water supply before EPA or NYSDEC would resupply them. EPA stopped providing bottled water in 1986 once the carbon filters were installed. Since EPA has satisfied concerns about the effectiveness of the carbon filters currently there is no requirement for EPA to supply bottled water.

- Concern about health effects from contamination. Residents were concerned about an expeditive cleanup of the American Thermostat site so that the plume of contamination does not spread and exposure is reduced. The remedy selected in the ROD will prevent exposure of the residents to contaminated groundwater. The subsequent RI/FS planned by EPA for the site will, among other things, address possible methods of remediating the contamination at and around the site.

- Adverse economic impact from contamination. Residents expressed concern about potential decrease in property values as a result of well contamination and the effect on employment because of the shut-down of the American Thermostat operation.

In addition to community interviews in January 1986 and a Community Relations Plan, EPA issued a Public Notice on December 3, 1987 that summarized the preferred remedial alternative, announced the availability of the Focused FS and PRAP for public review and comment, and provided notice of the upcoming public meeting. The notice was published in the Catskill Daily Mail. In addition, EPA developed a fact sheet that outlined the remedial alternatives and described EPA's preferred remedial alternative for the American Thermostat site. This fact sheet was distributed at the public meeting.

EPA conducted a public meeting on December 8, 1987 at the Greene County Court House in Catskill, New York, to provide information on the Focused FS and EPA's preferred remedial alternative, and to provide an opportunity for interested parties to present verbal comments and questions to the EPA. Six local officials and twelve residents attended this meeting, as well as three EPA officials, members of EPA's contractor staff, and representatives of NYSDOH and NYSDEC.

The comments and questions received by EPA at the public meeting are recorded in a full transcript of the meeting, which is available for review at EPA's regional office in New York City, NYSDEC's office in Albany, New York, and the Greene County Court House in Catskill, New York.

III. SUMMARY OF MAJOR QUESTIONS AND COMMENTS RECEIVED DURING THE PUBLIC COMMENT PERIOD AND EPA'S RESPONSE TO COMMENTS

On December 3, 1987, EPA released the Focused FS and PRAP to receive verbal and written comments from the public from December 3, 1987 until December 24, 1987. This responsiveness summary summarizes the significant concerns and issues raised during the public comment period and EPA's responses to those concerns. These concerns and issues have been considered by EPA in the final decision on the remedial alternative.

Verbal Comments

During the public comment period approximately twenty verbal comments were received at the public meeting; most dealt with public health protection and the proposal to expand the pipeline capacity. These comments are categorized by the following topics.

A. Health and safety,

B. Nature and extent of contamination, and

C. Preferred remedial alternative.

A. Health and Safety

1. Comment: A local official asked if the public has been informed of the nature and potential health effects of the detected contaminants.

EPA Response: In 1981 NYSDOH informed the affected residents of the potential health effects of using contaminated water and advised residents not to use the water for cooking or drinking purposes. Furthermore, EPA has implemented a removal action to maintain and install additional carbon filters at seven residences and an airlift stripping system at one residence to mitigate the problem of drinking water contamination.

2. Comment: A resident inquired if EPA had conducted a health evaluation of the affected residents.

EPA Response: A risk assessment will be conducted by EPA's contractor during the RI/FS for the second operable unit. The Agency for Toxic Substances and Disease Registry (ATSDR) will prepare a health assessment based upon this document.

3. Comment: A resident inquired if the quality of the proposed alternative water source meets federal and state drinking water standards.

EPA Response: Water supplied by the Catskill Water District meets state and federal standards and NYSDOH will routinely monitor to ensure that the proposed water supply continues to meet safe drinking water standards.

4. Comment: A local official asked if the carbon filters installed at the affected residences were proven to provide a

safe level of public protection from the contaminated water.

EPA Response: The carbon filters that were installed at seven of the affected residences have been proven to be effective in removing contaminants.

5. Comment: A local official inquired if future property owners would be eligible to receive carbon filters if additional wells were drilled and contamination was detected.

EPA Response: In accordance with EPA policy, until the remedy selected in the ROD is implemented, future property owners would be eligible to receive carbon filters to treat contaminated well water. Once the waterline is installed, however, new homeowners will have to hook up to the waterline at their own expense.

B. Nature and Extent of Contamination

1. Comment: A local official inquired about the extent of the contamination and how EPA defined the proposed water supply service area.

EPA Response: Contamination was found to extend a half mile northwest and a quarter mile southeast of the American Thermostat site and within the boundaries of Catskill Creek and Route 23. To determine the proposed water supply service area, EPA estimated the potential area of contamination by projecting the extent of contaminant migration after twenty years of groundwater restoration efforts. Based on these estimates, EPA determined that the service area included all residents within the boundaries of one mile northwest and a half mile southeast of the American Thermostat site and within Catskill Creek and Route 23.

2. Comment: One resident asked if groundwater contamination will be removed.

EPA Response: A RI/FS will be conducted by EPA to examine the source, nature, and extent of the contamination and to develop measures to clean up the American Thermostat site and groundwater contamination. Based on the findings of this RI/FS a remedial alternative may be selected to remove the contaminants from the groundwater.

3. Comment: A local official asked if contaminants were detected in the Catskill Creek and where water samples were taken at the creek.

EPA Response: Based on one sample taken in 1982 near the historical bridge at Leeds, contaminants have not been detected in the Catskill Creek. Additional samples will be collected by

EPA during the upcoming RI/FS for the second operable unit.

C. Preferred Remedial Alternative

1. Comment: One resident inquired about the number of pipelines involved in implementing the preferred remedial alternative.

EPA Response: The selected remedial alternative involves the installation of one pipeline to provide a safe water supply to the designated service areas. Installation of a single pipeline is efficient and can be quickly implemented to provide the public with a safe potable water supply as quickly as possible.

2. Comment: A local official asked whether the preferred remedial alternative can accommodate all properties within the proposed water supply service area.

EPA Response: The selected remedial alternative will accommodate all properties within the proposed water supply service area. A six inch diameter pipe has been determined by EPA to provide a sufficient amount of water to the current residents within the proposed water supply service area.

3. Comment: A county official asked who would operate and maintain the proposed extended pipeline extension.

EPA Response: Pursuant to the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) the State of New York is required to provide for the operation and maintenance of the system. The specific arrangements regarding the operation and maintenance of the system will have to be coordinated between the state and local municipalities.

4. Comment: A resident inquired about the costs that may be incurred by homeowners to implement the preferred remedial alternative.

EPA Response: EPA (or the potentially responsible parties) will assume responsibility for all design and construction costs of the selected remedial alternative (the state will contribute 10 percent of the construction costs). Once the new pipeline is installed and homes are connected, EPA's responsibilities do not extend to the additional usage and maintenance expenses. Further expenses incurred by residents for water usage would be determined by the water district.

5. Comment: Several local officials expressed support for implementation of the preferred alternative. These local officials wanted to know whether it was possible to increase the size of the proposed pipeline to accommodate future development

in the Village of Catskill, and the Towns of Cairo, and Athens and to provide fire protection.

EPA Response: EPA would support a proposal to increase the capacity of the pipeline system to accommodate future development and to provide fire protection. However, EPA's primary concern and responsibility is to quickly provide public health protection to affected or potentially affected residents. Also, EPA cannot assume the additional cost of the pipeline expansion. This additional cost would have to be borne by one or more of the interested municipalities. The provision of fire protection for the potentially affected area is not required by law. However if the municipalities are willing to incurr the incremental costs for fire protection, EPA would cover the costs for partial fire protection such as the valves, hydrants, etc. Furthermore, any commitment on their part to pay this incremental cost would have to be made prior to the initiation of the remedial design.

6. Comment: A local official asked if all the towns have been informed of the request by the Village of Catskill to expand the pipeline capacity.

EPA Response: Prior to the December 8th public meeting, EPA representatives met with the Catskill Town Supervisor and were informed of the request by the Town of Catskill to expand the pipeline capacity beyond what is proposed in the Focused FS. EPA is willing to arrange another meeting with interested parties to discuss the request to increase the pipeline capacity.

7. Comment: A resident inquired when EPA would need an agreement among the towns to assume responsibility for the additional costs of expanding the pipeline to accommodate future development.

EPA Response: The detailed design of the remedial alternative is scheduled to start in March 1988 and an agreement from the towns must be reached before the design is started.

8. Comment: A local official inquired about the time period involved in completing the design of the preferred remedial alternative and when construction would begin.

EPA Response: The design of the selected remedial alternative is scheduled to take three to four months to complete and the construction is proposed to be funded in Fall 1988.

Written Comments

Three letters with approximately thirty comments were received by EPA during the public comment period; most involved technical questions and stressed the need to timely inform the appropriat agencies and municipalities and residents. The following letters were received by EPA from the Greene County Planning Department, the Village of Catskill Board of Trustees, and a resident, and are attached as Appendix One.

RESPONSES TO COMMENTS FROM THE GREENE COUNTY PLANNING DEPARTMENT IN LETTER OF DECEMBER 16, 1987

1. Comment: Would greatly appreciate being supplied a transcript of the December 8th meeting as soon as it becomes available.

EPA Response: A copy of the transcript and a copy of the Responsiveness Summary will be made available at the information repositories established for this site. The information repositories are located at the following addresses:

Greene County Court House
County Clerk's Office
P.O. Box 446
Main Street
Catskill, New York 12414

New York State Department of
Environmental Conservation
50 Wolf Road
Albany, New York 12233

U.S. Environmental Protection Agency
Emergency and Remedial Response Division
26 Federal Plaza
New York, New York 10278

2. Comment: There are several companies interested in locating at the site, however, I am still not clear as to when the site will be available for use. I would appreciate being informed of other additional considerations which may be of concern in regard to the future use of the site.

EPA Response: The reuse of the American Thermostat site will depend on the requirements of the second operable unit, cleanup of the site.

During the remedial investigation planned to commence in January 1988, EPA will determine the nature and the extent of the contamination at and around the site. At the completion of this study, EPA will be better able to discuss concerns about the possible future use of this site. Measures need to be taken to provide a safe water supply for future use at the American Thermostat site.

3. Comment: Although I was very pleased to hear of a solution close at hand, I was taken back by the inadequacy to properly inform the appropriate municipalities of the proposal(s).

I hope that as you near a decision on a water supply alternative, that better communication be had between your agency and those having an interest here in Greene County.

In light of the fact that EPA's preferred alternative 4A-3 would withdraw water from the Village of Catskill supply, I fail to understand why the local authorities have not been fully informed of your agency's proposal.

EPA Response: A public notice, which is required under the Superfund Amendment and Reauthorization Act (SARA), was published in the Catskill Daily Mail announcing the date, location, and time of the public meeting. EPA's preferred remedial alternative and the 21-day public comment period to review the Focused FS were also announced in the public notice. In addition, the concerned municipalities were notified about the public meeting. Futhermore, EPA and its contractor consulted the Village consulting engineer during the months preceding the issuance of the Focused FS.

EPA believed that all of the appropriate parties were contacted. We regret any misunderstandings that may have resulted. At this time, all of the appropriate agencies and municipalities have been contacted by EPA and it is EPA's intent to work jointly with these municipalities and agencies to expedite the implementation of an alternate water supply.

During preparation of the Focused Feasibility Study Report, EPA's contractor contacted the following interested agencies.

- NYSDEC
- NYSDOH
- Cairo Planning Board
- Greene County Highway Department
- NYSGS, UGS
- Potic Reservoir Water Treatment Plant
- Village of Catskill Department of Public Works
- Village of Catskill Offices

- Greene County Tax Office
- ISO Commercial Risk Services, Inc.
- Consulting Engineer for Village of Catskill

4. Comment: According to a newspaper article, the Village of Catskill water supply system does not have the capacity to withstand additional withdrawls proposed by several future projects, including a 400 room hotel, expansion of a nursing home and a townhouse development project.

EPA Response: The provision of water for this project requires about 3 percent of the total system capacity and therefore has a very minor impact on the Village of Catskill water supply system.

EPA was informed of a proposal to construct a 400 unit hotel but the project was defeated. EPA is not aware of any other proposed projects. Based upon available data, the water supply system has been calculated to provide enough water to accommodate both the proposed service area and projected growth in the present water district.

5. Comment: According to EPA schedule of events, any response to your proposal would be required almost immediately. This simply does not provide local and county governments enough time to accomplish the many tasks involved in preparing a thorough response.

EPA Response: In accordance with SARA, a public comment period was established for 21 days after the release of the Focused FS and EPA's preferred alternative for public review and comment. An independent assessment may be conducted to facilitate an agreement, if the Village and EPA deem necessary.

RESPONSES TO COMMENTS FROM THE VILLAGE OF CATSKILL BOARD OF TRUSTEES IN LETTER OF DECEMBER 16, 1987

1. Comment: In reference to Figure 1-3 in the Focused FS the septic tank absorption field is not an absorption field, it is a sand filter with the treated effluent discharging to Tributary A.

EPA Response: The error is noted.

2. Comment: The present reservoir is inadequate to meet the existing demand in drought periods. How will the reservoir capacity be increased? Present regulations are for a 100-year safe yield; the Village supply has gone dry twice in the last 30 years.

EPA Response: The projected additional demand based on population and maximum expected flow will only be approximately 3 percent of the total capacity of the system. Any supplemental water sources used during a drought by the existing water supply district should be applicable to the proposed service area.

3. Comment: The present filters will be inadequate to meet the increased demand; the two filters which were not rebuilt in the recent rehabilitation will have to be rebuilt.

EPA Response: The two filters will not be needed to supply the projected additional demand, which will only be about 3 percent of the total system capacity.

4. Comment: There is a question by the U.S. Corps of Engineers about the safety of the Potic Dam. This must be addressed. The design is done, but there are no funds for the rebuild. If the reservoir water level has to be dropped for safety reasons, there will be no water for the project.

EPA Response: The potential impact of lowering the reservoir water level for safety reasons will be evaluated during the design phase.

5. Comment: An increased demand of 10 percent of present usage has already been requested within the present water district, part of which has been approved (part of the increased-demand request is for an existing health related facility). There will be a meeting February 1, 1988, for all concerned parties to submit comments on their future water usage requests from the Catskill water supply.

EPA Response: The projected additional demand associated with supplying water to the affected and potentially affected residents is expected to be only 3 percent of the total capacity of the system. Based upon available data, the water supply system has been calculated to provide enough water to accommodate both the proposed service area and the projected growth in the present water district. An independent assessment may be conducted to facilitate an agreement, if the Village and EPA deem necessary.

6. Comment: The previous secondary pumping source used in the two drought periods can no longer be used; a secondary source must be developed prior to approval. This secondary source must be acceptable to all concerned agencies and the water purveyor.

EPA Response: Development of a new secondary source is the responsibility of the Village of Catskill.

7. Comment: Table 2-2 in the FS does not allow a proper ti schedule for State Environmental Quality Review Act (SEQRA), Water Supply Application (WSA) review, and possible approval by the Catskill Village Board. Since a WSA Permit is required, the SEQRA process is initiated.

EPA Response: EPA, NYSDEC, and NYSDOH are each working to provide an alternate water supply to the affected and potentially affected residents in a timely manner. To reach this goal, EPA anticipates that all necessary permit reviews and approvals can be performed and obtained expeditiously.

8. Comment: The entire project must not produce a financial burden upon the existing water purveyor, including costs of fire protection, legal, technical, and administrative review of the project on local and state levels; construction costs; inspection costs; and operation and maintenance.

EPA Response: EPA does not anticipate this project placing a significant financial burden on the local municipalities. The construction costs will be paid for by EPA and the New York State Department of Environmental Conservation (or by the Potentially Responsible Parties). Pursuant to CERCLA, the State is required to assure the payment of all operation and maintenance costs before remedial construction can proceed. If the local municipalities wish to have the water supply system provide fire protection, a portion of the incremental costs involved will have to be borne by the municipalities, as indicated in the ROD.

9. Comment: Comments by the New York State Department of Health during the SEQRA, WSA process--which will not be available by December 23, 1987--will be required for review by the Village of Catskill prior to considering all concerns for the proposed approval. The involved state agencies did not appear at the public hearing because the public hearing was premature.

EPA Response: Both NYSDEC and NYSDOH officials were consulted during the preparation of the Focused FS. Furthermore, representatives of both state agencies attended a meeting with the Town Supervisor on December 8, 1987 and participated in the public meeting held that evening. EPA expects both state agencies to remain actively involved during the implementation of this remedial action.

10. Comment: The Village of Catskill requests a scoping session for all concerned agencies to define under the SEQRA the environmental issues to be addressed. The lead agency must be acceptable to the Village of Catskill and under the SEQRA regulations must be one of the permit-issuing agencies.

EPA Response: The potential environmental concerns associated with implementing each alternate water supply scenario were evaluated in the Focused Feasibility Study. It is EPA's intent to meet with all concerned agencies prior to the start of the design of the selected alternative.

11. Comment: Alternative 4A-3 has the longest pipe line, almost twice that of the other alternatives, with resultant greatest potential for failure. The length of pipe should be reduced to a minimum.

EPA Response: Based on effectiveness, implementability, and cost, alternative 4A-3 was selected by EPA as the preferred alternative after a comprehensive evaluation was conducted. The many concerns raised by residents and local and county officials have been considered by EPA and have been incorporated into the ROD. The selected alternate water supply remedy involves extension of the Catskill Water District pipeline to the affected areas. Following discussions with the local agencies, the specific route for this pipeline will be selected during the design phase.

12. Comment: In view of the deficiencies of the Potic reservoir and filtration system, the alternatives eliminated from detailed evaluation, specifically, items 2 and 11 in Table 2-10 of the Focused FS, should be re-evaluated.

EPA Response: The detailed evaluation of each alternative is presented in the Focused Feasibility Study report. As discussed in the report, Alternative 2A (Operations and Maintenance of Existing and Additional Point-of-Use Treatment Systems) was eliminated since it fails to provide a reliable and permanent remedy. Alternative 4B (New Surface Water Source and Treatment System) was eliminated since it was unreliable, unproven, and would require complex construction and operation and maintenance.

13. Comment: A booster pumping station is an excessive operating cost item for the cost of energy and an unnecessary high-maintenance item. A larger pipe with gravity flow is preferred, even if a water tower must be installed to provide a fire surge reserve or peak demand. The highest affected residence in the potential plume area appears to be at approximately 300 feet; the clearwell head is about 400 feet, allowing a gravity static pressure exceeding 40 psi. Every effort should be made to eliminate pumps and a pumping station.

EPA Response: A pumping station was included to overcome the frictional losses resulting from the 6-inch diameter pipeline. If a 12-inch diameter pipeline were to be used, as described in the fire protection scenario, it may be possible to use an elevated water storage tank and thereby eliminate the need for a pumping station. However, the difference in cost incurred for using an increased diameter will have to be paid by the municipalities concerned.

14. Comment: Assuming an annual operation and maintenance cost of 100,000 (Table 4-8 in the Focused FS has a low of $99,600 to a high of $200,120), the operation and maintenance spread over the 23 homes is $4,348/year per home; spread over 80 homes is $1,250/year per home. This is excessive; who will pay this amount to operate the water district? What will these costs be to the user in 30, 40, and 50 years from now? What control will the water purveyor have over the operation and maintenance?

EPA Response: A more accurate estimate of the operations and maintenance costs will be developed during the detailed design. As stated above, under CERCLA, the State must assure payment of all operations and maintenance costs. Specific arrangements regarding payment for and performance of the necessary operations and maintenance will have to be worked out by the State and the local municipalities concerned.

15. Comment: Alternative 4D - Extension of the mobile home park water supply: This is a private supply. Have the owners of the park been consulted on possible purchase of their water supply? There does not appear to be a cost included in the estimates for purchase of the private systems. What will the effect of any pumping be on the pollution plume?

EPA Response: If this alternative was selected, negotiations with the owners would be held during the detailed design. Since it was not selected, the effect of pumping on the contaminant plume was not determined.

16. Comment: The water district will include the entire length of the pipe. What are the implications and possible demands of future requests for water and possible developments along the pipe line? This must be addressed.

EPA Response: The development of an alternate water supply under CERCLA does not address future growth. If the local community desires to increase the service area, the community will have to bear the incremental cost.

17. Comment: The present water district outside of the Village over which the transmission line traverses pays taxes to the towns and school districts. What are these taxes for the new district? They are not figured into the cost estimates. The longer line in the recommended alternative will pay much higher taxes than the shorter line.

EPA Response: The Village's concern regarding higher taxes associated with Alternative 4A-3 will be taken into account by EPA when it makes a decision during the design phase regarding the specific route of the water line.

18. Comment: Since the Superfund will fund only the cost of the original 23 affected homes, who will pay for subsequent homes affected by the plume in future years?

EPA Response: EPA and the State will pay for the hookup of all of the affected and potentially affected homes that are to be hooked-up to the waterline. However, if new construction should occur within the affected area after the new water district is formed and the waterline is installed, the new homeowners will be required to hook-up to the waterline at their own expense.

19. Comment: The eminent domain issue for obtaining right-of-ways... has not been addressed. The Village of Catskill does not have eminent domain rights outside of the Village. This must be clarified.

EPA Response: The Greene County Highway Department has been contacted regarding access to county roads and a sample of the appropriate permit application has been included in Appendix D of the report. Final approvals will be acquired during the detailed design and construction.

20. Comment: The water rates proposed and shown in the cost estimate do not appear to be realistic; this must be addressed.

EPA Response: These water rates are preliminary and are based on current data provided by the Village of Catskill in October, 1987. The rates were converted from the District's quarterly charge per thousand cubic feet of water to a price per thousand gallons.

21. Comment: Looking at present and projected costs, would it be cheaper to relocate the affected homes? This option should be explored; it would reduce the risk of other environmental hazards such as the cancer cases reported in the Catskill Daily Mail.

EPA Response: The objective of the Focused FS was to develop an alternative water supply system for the affected and potentially affected residents. It is EPA's intention to address the contamination at and emanating from the American Thermostat site during the RI/FS of this project. Therefore, EPA presently does not feel that it would be appropriate to simply relocate the affected residents and not attempt to clean up the contaminated area.

22. Comment: The Village of Catskill is to directly receive copies of all technical information, letters, comments, etc., associated with this project. The present repositories for

records are not acceptable to the Village of Catskill; the Village offices are to be a repository.

EPA Response: Technical reports concerning the site are available at the established information repositories. EPA selected the location of this information repository based on suggestions made during community interviews. EPA will consider relocating the local information repository to the Catskill Village office, if it is deemed more convenient for the community.

RESPONSES TO COMMENTS BY DOROTHY AND RICHARD LAIS IN LETTER OF DECEMBER 22, 1987

1. **Comment**: Alternatives 4A-1, 2, and 3 are the safest and most practical if an adequate water supply is available to service the affected and potentially affected homes, and if the Village of Catskill agrees to extend the water district.

EPA Response: The projected additional water demand associated with extending the Catskill Water District waterline based upon the population and maximum expected flow is expected to be only 3 percent of the total capacity of the system. EPA would like the Village of Catskill's support to extend the pipeline and establish a water district, in order to quickly provide an alternate water supply to the affected and potentially affected residents.

2. **Comment**: In September of 1987, Senator Moynihan released $6.75 million of EPA funds to be used at the American Thermostat site in 1988. We trust this means a sincere effort will be made to remediate the site.

EPA Response: Funds under Superfund to initiate a remedial investigation/ feasibility study at the American Thermostat site were recently obligated. This RI/FS will, among other things, evaluate possible methods of cleaning up the site.

3. **Comment**: We feel that six days notice about the December 8, 1987 meeting, and the deadline of December 24, 1987 for comments on the preferred alternative, combined with an inaccurate, incomplete mailing list shows insensitivity to the affected and potentially affected community.

EPA Response: According to CERCLA, notification of a public meeting and a public comment period, including an announcement of the availability of a feasibility study report, must be given when the report is made available. Once the Focused FS for the American Thermostat site was finalized, a meeting announcement was sent to all those interested residents, local officials, the media and state officials on our mailing list. The names and addresses of all official group representatives and residents who should receive regular information about the site are included in our mailing list, which is revised periodically. A public notice, as required now under SARA was also published in the legal section of The Catskill Daily Mail on December 3, 1987 which indicated the date, time, and location of the meeting, provided notification of the 21 day public comment period and specified a preferred alternative for providing an alternate water supply. In addition, follow-up telephone calls were made to ensure that interested residents were well informed of the scheduled meeting, availability of the report and the 21 day public comment period.

IV. REMAINING CONCERN

The only remaining concern among residents is whether the American Thermostat facility will be restored for future use and development.

GREENE COUNTY
PLANNING DEPARTMENT
Greene County Office Building
Rt. 3, Box 909
Cairo, New York 12413

Telephone (518) 622 325
RONALD M. ROTH, Dire

December 16, 1987

Mr. Peter Acker, Remedial Project Manager
US Environmental Protection Agency, Region II
26 Federal Plaza
New York, NY 10278

Dear Mr. Acker:

Let me first take an opportunity to express my gratitude for the work you have done in regard to the American Thermostat Superfund Site in Greene County, NY. I attended the evening meeting on December 8th and was pleased to be informed of EPA's progress in securing a safe water supply for the affected residents. Your focused attention is especially reassuring in light of the seriousness of the problem.

In addition I would also like to express several thoughts and comments in response to the proceedings of the above mentioned meeting.

First, I would greatly appreciate being supplied with a transcript of the December 8th meeting as soon as it becomes available. In the meantime, I would like to request a more immediate response to a few other concerns I have in regard to the discussion at the public meeting.

One of my concerns relates to a specific question raised at the meeting regarding when the American Thermostat site could be reoccupied by another company. At present, there are several companies interested in locating at the site, however, I am still not clear as to when the site will be available for use. Such as it is, I would appreciate you clarifying this matter. I would also appreciate being informed of other additional considerations which may be of concern in regard to the future use of the site.

Another concern relates directly to your proposal(s) to supply affected residents with a clean, potable water source. Although I was very pleased to hear of a solution close at hand, I was taken back by the inadequacy to properly inform the appropriate agencies and municipalities of the proposal(s). If appropriate contact had been made, I feel better preparation to respond to the study could have been attained.

I would hope that as you near a decision on a water supply alternative that better communication be had between your agency and those having an interest here in Greene County. This lack of communication will only lead to misinformation and possible delays in finding solutions to the problem.

As a case in point, I am aware of a potentially significant problem which will likely have a bearing on several proposals that require water withdrawal from the Village of Catskill supply. I have enclosed a newspaper article which sites the Village's concern over an already over-stressed water supply. According to the article, the Village of Catskill water supply system does not have the capacity to withstand additional withdrawals proposed by several future projects, including a 400 room hotel, expansion of a nursing home, and a townhouse development project.

In light of the fact that EPA's preferred alternative (4A-3) would withdraw water from the Village of Catskill supply, I fail to understand why the local authorities have not been fully informed of your agency's proposal. This is especially disturbing when a final decision on an alternative water supply is scheduled to be made in a few short months.

Unfortunately, according to your schedule of events, any response to your proposal would be required almost immediately. This simply does not provide local and county governments with the time required to accomplish the many tasks involved in preparing a thorough response.

The Greene County Planning Department also has a deep interest in the American Thermostat situation. The Planning Department is prepared to respond to the proposals discussed at the meeting; however, to do so responsibly the Department must be kept up-to-date on any new developments and information. Therefore, it is imperative to keep the lines of communication open in order to guarantee the quickest and most suitable solution to the problem.

In light of this, I am still encouraged by the proceedings of the public meeting and look forward to working with you in the future. Therefore, if I may be of further assistance, please feel free to contact me.

Sincerely,

Albert C. Flick

Albert Flick
Planner

AF:mc
encl.

TRUSTEES:
Michael Battaglino
Frank Bergamini
Jean Deyo
Grant Downs
Ted Hilscher

ATTORNEY FOR VILLAGE
Robert Carpenter

MICHAEL BATTAGLINO
President

FRANK BERGAMINI
Vice President

CAROLYN S. PARDY
Clerk-Treasurer-Collector

VILLAGE OF CATSKILL
422 MAIN STREET
CATSKILL, NEW YORK 12414

Tel. (518) 943-3830

CERTIFIED MAIL, RETURN RECEIPT REQUESTED

December 16, 1987

Mr. Peter J. Acker, Project Manager
Emergency Remedial Response Division
U. S. Environmental Protection Agency
26 Federal Plaza - Room 747
New York, New York 10027

Subject: Comments on Focused Feasibility Study
for Alternate Water Supply
American Thermostat, South Cairo, New York
EPA Contract No. 68-01-7250

Dear Mr. Acker:

Following are comments to be included in the record with respect to the above-referenced REM III Program Focused Feasibility Study for an alternate water supply for the affected homes as a result of the pollution plume created by the American Thermostat Corporation.

(1) Figure 1-2: The septic tank absorption field is not an absorption field; it is a sand filter, with the treated effluent discharging to Tributary A.

(2) The present reservoir is inadequate to meet the existing demand in drought periods; how will the reservoir capacity be increased? (Present regulations are for a 100-year safe yield; the Village supply has gone dry twice in the last 30 years.)

(3) The present filters will be inadequate to meet the increased demand; the two filters which were not rebuilt in the recent rehabilitation will have to be rebuilt.

(4) There is a question by the U. S. Corps of Engineers as to the safety of the Potic Dam, which must be addressed. The design is done, but there are no funds for the rebuild. If the reservoir water level has to be dropped for safety reasons, there will be no water for the project.

(5) An increased demand of 10% of present usage has already been requested within the present water district, part of which has been approved (part of the increased-demand request is for an existing health related facility). There will be a meeting February 1, 1988, for all concerned parties to submit comments on their future water usage requests from the Catskill water supply.

(6) The previous secondary pumping source used in the two drought periods can no longer be used; a secondary source must be developed prior to approval. This secondary source must be acceptable to all concerned agencies and the water purveyor.

(7) Table 2-2 does not allow a proper time schedule for SEQRA, Water Supply Application review, and possible approval by the Catskill Village Board. Since a WSA Permit is required, the SEQRA process is initiated.

(8) The entire project must not produce a financial burden upon the existing water purveyor, including costs of fire protection; legal, technical, and administrative review of the project on local and state levels; construction costs; inspection costs; and operation and maintenance.

(9) Comments by the New York State Department of Health during the SEQRA, WSA process—which WILL NOT be available by December 23, 1987—will be required for review by the Village of Catskill prior to considering all concerns for the proposed approval. The involved state agencies did not appear at the public hearing because the public hearing was premature.

(10) The Village of Catskill requests a scoping session for all concerned agencies to define under the SEQRA the environmental issues to be addressed. The lead agency must be acceptable to the Village of Catskill and under the SEQRA regulations must be one of the permit-issuing agencies.

(11) Alternative 4A-3 has the longest pipe line, almost twice that of the other alternatives, with resultant greatest potential for failure. The length of pipe should be reduced to a minimum.

(12) In view of the deficiencies of the Potic reservoir and filtration system, the alternatives eliminated from detailed evaluation, Table 2-10—namely, items 2 and 11—should be re-evaluated.

(13) A booster pumping station is an excessive operating cost item for the cost of energy and an unnecessary high-maintenance item. A larger pipe with gravity flow is preferred, even if a water tower must be installed to provide a fire surge reserve or peak demand. The highest affected residence in the potential plume area appears to be at approximately 300 feet; the clearwell head is about 400 feet, allowing a gravity static pressure exceeding 40 psi. Every effort should be made to eliminate pumps and a pumping station.

(14) Assuming an annual operation and maintenance cost of $100,000 (Table 4-8 has a low of $99,600 to a high of $200,120), the O & M spread over the 23 homes is $4,348/year per home; spread over 80 homes is $1,250/year per home. This is excessive; who will pay this amount to operate the water district? What will these costs be to the user in 30, 40, and 50 years from now? What control will the water purveyor have over the operation and maintenance?

(15) Alternative 4D - Extension of the mobile home park water supply: This is a private supply. Have the owners of the park been consulted on possible purchase of their water supply? There does not appear to be a cost included in the estimates for purchase of the private systems. What will the effect of any pumping be on the pollution plume?

(16) The water district will include the entire length of the pipe. What are the implications and possible demands of future requests for water and possible developments along the pipe line? This must be addressed.

(17) The present water district outside of the Village over which the transmission line traverses pays taxes to the towns and school districts. What are these taxes for the new district? They are not figured into the cost estimates. The longer line in the recommended alternative will pay much higher taxes than the shorter line.

(18) Since the Superfund will fund only the cost of the original 23 affected homes, who will pay for subsequent homes affected by the plume in future years?

(19) The eminent domain issue for obtaining right-of-ways—if the right-of-way is not given—has not been addressed. The Village of Catskill does not have eminent domain rights outside of the Village. This must be clarified.

(20) The water rates proposed and shown in the cost estimate do not appear to be realistic; this must be addressed.

(21) Looking at present and projected costs, would it be cheaper to relocate the affected homes? This option should be explored; it would reduce the risk of other environmental hazards such as the cancer cases reported in the Catskill DAILY MAIL.

(22) The Village of Catskill is to directly receive copies of all technical information, letters, comments, etc., associated with this project. The present depositories for records are not acceptable to the Village of Catskill; the Village offices are to be a depository.

The Village of Catskill Board of Trustees realize the health problems and water supply problems within the polluted area. The Board is responsible to the approximately 8,000 existing users of the Catskill water system and must be COMPLETELY assured that any additional load on the system will not escalat costs of operation and maintenance and that there will be a continual safe source of potable water. When all concerns by all the involved agencies and the Board of Trustees have been addressed to the Board's satisfaction, the Board will then consider approval of connection to the proposed water district.

Very truly yours,

VILLAGE OF CATSKILL

Michael Battaglino
President

c

cc: Robert E. Carpenter, Esq.
Mr. S. Lawrence Baldwin, P.E.
Mr. J. D. Rusack, P.E.
Mr. Gilbert Faustel, P.E.
Mr. Jeffrey Sama, P.E.
Mr. Neil Geevers, EBASCO

TEXAS WATER COMMISSION

Paul Hopkins, Chairman
John O. Houchins, Commissioner
B. J. Wynne, III, Commissioner

Allen Beinke, Executive Director

J. D. Head, General Counsel
Michael E. Field, Chief Examiner
Karen A. Phillips, Chief Clerk

March 18, 1988

Dr. Allyn M. Davis
Director, Hazardous Waste Management Division
U.S. Environmental Protection Agency
Region VI (6H)
1445 Ross Avenue
Dallas, TX 75202

Re: Industrial Transformers Superfund Site
Draft Record of Decision

Dear Dr. Davis:

We have reviewed the proposed Record of Decision (ROD) for the contaminated soils (Operable Unit I) at the Industrial Transformers Superfund Site. We have no objection to the selected remedy as described in the draft ROD. The selected remedy for the site includes treatment of soils contaminated with polychlorinated biphenyls (PCBs) above the cleanup criterion using chemical dechlorination.

Sincerely,

Allen Beinke
Allen P. Beinke
Executive Director

GT/mem